THE AMERICAN NEPTUNE

A QUARTERLY JOURNAL OF MARITIME HISTORY

Volume IV. No. 2
April 1944

COPYRIGHT 1944 BY THE AMERICAN NEPTUNE, INCORPORATED

SALEM, MASSACHUSETTS

Printed by The Southworth-Anthoensen Press, Portland, Maine

Published by The American Neptune, Incorporated, Salem, Massachusetts

THE AMERICAN NEPTUNE

A Quarterly Journal *of Maritime History*

VOLUME IV APRIL 1944 NUMBER 2

IN *April* 1943 *the Historian of Naval Operations, Commander S. E. Morison, offered the readers of the* NEPTUNE *an account of the landing at Fedhala, French Morocco, on* 8 *November* 1942, *in which he had participated. In November* 1943 *Commander Morison was in the Central Pacific. The varied names of the islands there being attacked by United States forces aroused his curiosity and led to the comprehensive historical sketch of the Marshall and Gilbert Islands here presented.*

With the progress of the war in the Pacific, islands that three years ago were touched at only by exploring expeditions, trading schooners, or an occasional tramp steamer, have suddenly become familiar battlefields or way stations on the new routes of military and naval surface and air transportation. The rapidity of this change has jolted the complacency of our school-book ideas of geography, for, as Richard Buckminster Fuller points out in introducing his new World Map on Dymaxion Projection *in the present issue, 'the world has been surprising itself by coming in its own backdoors and down its own chimneys from every unlooked for direction.' This map, which describes the earth's surface with a minimum of distortion, and shows the unity of the continental masses in a manner never before obtained, may be mutably arranged in any direction so as to focus attention upon any desired interrelationship*

of world areas. While of especial value for the consideration of the rapid-moving present, it is equally useful as a means of understanding the past. It should be of assistance to readers of the NEPTUNE *in following the courses of voyages, in visualizing trade routes, in perceiving the motives of naval strategy. It is presented to them as a sailor's concept, for Mr. Fuller—although most widely known as an engineer and as the inventor of the Dymaxion House, the Dymaxion Transport Unit and other mass production projects—can rightly claim the status of sailor from his service in the last war. Entering the United States Naval Reserve Force in April* 1917 *as a Chief Boatswain, he was, after commanding submarine patrol boats, nominated to the Naval Academy special course. Subsequently, as Lieutenant (j.g.), U.S.N., he served in the Transport Force of the Atlantic Fleet. Since leaving the Navy in* 1922, *he has more than once brought seagoing technology ashore in industrial applications.*

In January 1944 *the* NEPTUNE *lost two staunch friends by the deaths of Lieutenant Alfred W. Paine, U.S.N.R., and Charles M. Wright, who had been members of the Editorial Advisory Board from the first planning of the journal. Alfred Paine, who died on active duty, had, from* 1930 *until he was called to active duty in* 1942, *conducted a shop in New York specializing in books relating to salt water. It was a genial place, more like a collector's library than a typical book shop, housed in a high-ceilinged brownstone house in East* 55*th Street, where lovers of marine books naturally gravitated. Similarly in Boston most maritime enthusiasts were equally drawn to the Advertising Manager's office of* The Boston Globe, *where Charles Wright, an incurable collector and a lovable companion, was bound to have a ship picture, the latest waterfront photographs, some newly acquired bit of ship-board plunder and a fund of good stories. Both men contributed more than their share to the planning and conduct of the* NEPTUNE. *They will be sadly missed by all of the Editors and many of the readers.* Requiescant in pace.

Historical Notes on the Gilbert and Marshall Islands

BY SAMUEL ELIOT MORISON

ANYONE who has to use a modern chart of the Gilbert and Marshall Islands must wonder where they obtained their names. Why have most of them at least two, and some of the Marshalls as many as twelve or fifteen? Where did Russian names like Kutusov and Romanzov come from? Why is Ebon also called Boston Atoll, and who were Woodle, Matthew and Hooper who have attained a kind of immortality in the Gilberts? Who, for that matter, were Gilbert and Marshall?

The answer is to be found in the history of voyages to these islands; and that history does not lie ready to hand. In libraries like those of the Peabody Museum in Salem and of Harvard College one can find accounts of long forgotten voyages, obsolete sailing directions and odd bits of information on the islands. Piecing them together has been a pleasant avocation between our capture of the Gilberts in November 1943, and that of the Marshalls in February 1944. As there is no book on the history of the Gilberts, and but two small ones, in German, on the history and description of the Marshalls,[1] I have clapped these notes together to satisfy the curiosity of others as well as myself.[2]

The curious nomenclature of these islands records successive discoveries, each explorer ignoring what his predecessor had accomplished. Only in the second half of the nineteenth century, when Christian missionaries learned the native languages, were the names used by the Micronesians themselves placed on the map. These were made official by the British in the Gilberts, and the Germans in the Marshalls. The Japanese added to the confusion by providing the Marshalls with a new nomen-

[1] Carl Hagen, *Die Marshall-Inseln* (Leipzig, 1889); A. Krämer and H. Nevermann, *Ralik-Ratak (Marshall-Inseln)* (Hamburg, 1938).

[2] I am particularly indebted to Mr. Lawrence W. Jenkins, director, Mr. Ernest S. Dodge, and Mrs. Augustus Peabody Loring, Jr., of the Peabody Museum for help in assembling data; and to the late H. F. Aitken, whose manuscript index to the history of the Pacific Islands, in the Peabody Museum, I was permitted to use by his heirs.

clature, but this is being erased by the armed forces of the United States as I write.[3]

1. *Spanish and Portuguese*

Magellan, the first European to cross the Pacific, managed to miss every island except two small and unprofitable ones (probably Malden and Jarvis), between the Straits and Guam. García de Loyasa, who was sent to follow up Magellan's discoveries in 1525, raised on 21 August 1526, in a latitude which he estimated to be 14° N, an island which he named San Bartolomeo. This, if his latitude was correct, may be assumed to have been Pokaakku Atoll (alias Taongi and Gaspar Rico), which rides out ahead of the Marshalls. If he had been two degrees further south he might have discovered the entire chain.

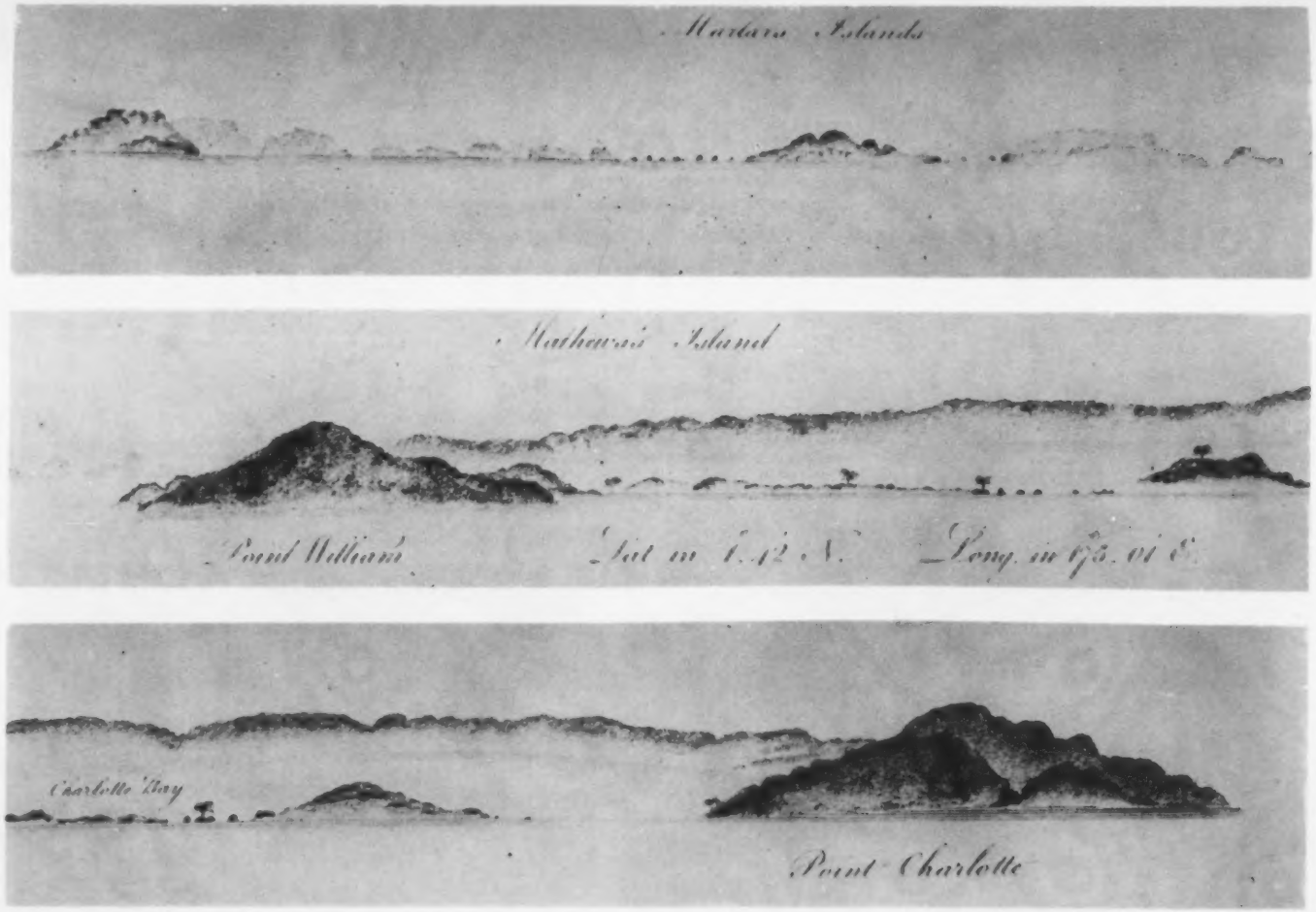
Nineteen years later, Miguel Lopez de Legaspi, founder of Manila and conqueror of the Philippines for Spain, is said to have passed through the northern Marshalls and named four of them. Alvaro de Mendaña, in the expedition of 1568 that discovered and named the Marquesas and the Solomons,[4] passed through the Ellice Islands going west, and discovered one — probably Nukufetau — which he named Isle Jesus. On the voyage back to Peru he passed through the Marshalls, and also, by a curious chance, hit on Wake Island, which he named San Francisco. Just which Marshall Islands he sighted cannot be told from his narrative; but the Spanish and Portuguese charts, for two centuries and more after, show a vague scattering of islands at the approximate position of the northernmost line of them, between latitudes 11° and 12° N, called the Pescadores (fishermen) or merely Recifes (reefs).

Makin, or Butaritari Atoll,[5] one of the three strategic islands in the Gilberts that the United States wrested from the enemy in November 1943, was probably discovered on the last of the great Spanish voyages of discovery, that of Pedro Fernández de Quiros in 1606. Quiros, a Portuguese by birth, had been on the second voyage of Mendaña, the one that missed the Solomons and ended at Ndeni (Santa Cruz). He was eager to

[3] A mimeographed *Gazeteer of the Marshall Islands*, compiled by the Cross-Cultural Survey of the Institute of Human Relations, Yale University, 2 January 1944, which reached my hands just as I went to press, is very useful as giving all the synonyms of the islands, their correct position according to the latest charts and sailing directions, and a bibliography.

[4] The Marquesas were so named by Mendaña because his expedition had been set on foot by Don García Mendoza, Marques de Canete, Viceroy of Peru; the Solomons were so called because it was assumed that they were the source of King Solomon's gold, with which he built the temple at Jerusalem and supported several hundred wives and concubines.

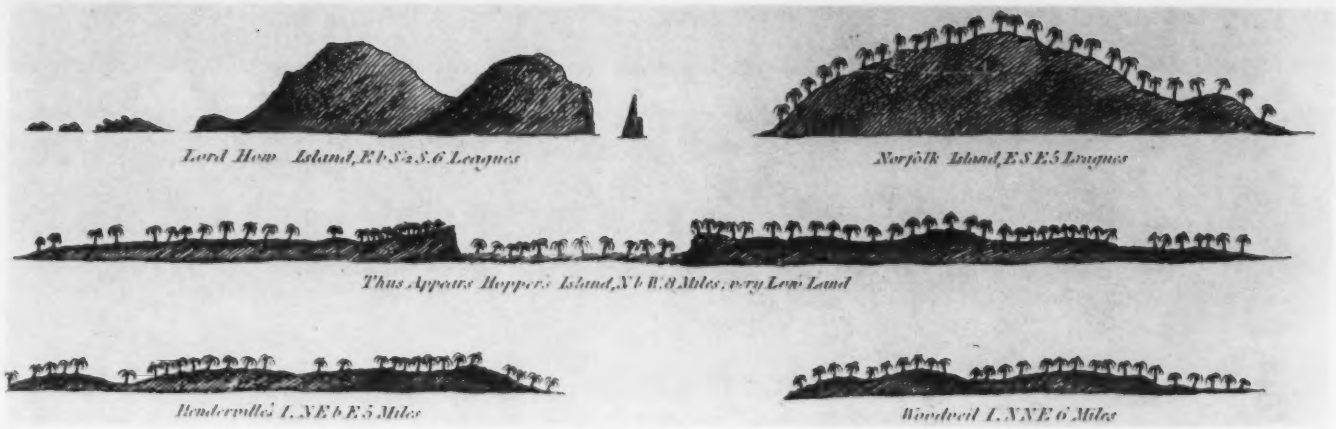
[5] The larger atoll has been called Makin (pronounced 'Muggin') only in the present century; the name properly belongs to Makin Meang, i.e. Little Makin, the larger atoll being called Butaritari or Taritari after its principal island.



Captain Gilbert's Sketches of 'Mathews's Island' [Tarawa?]

Reproduced from the copy of his Voyage from New South Wales, *1789, in the Harvard College Library, in which the three sections join to form a continuous panoramic view.*

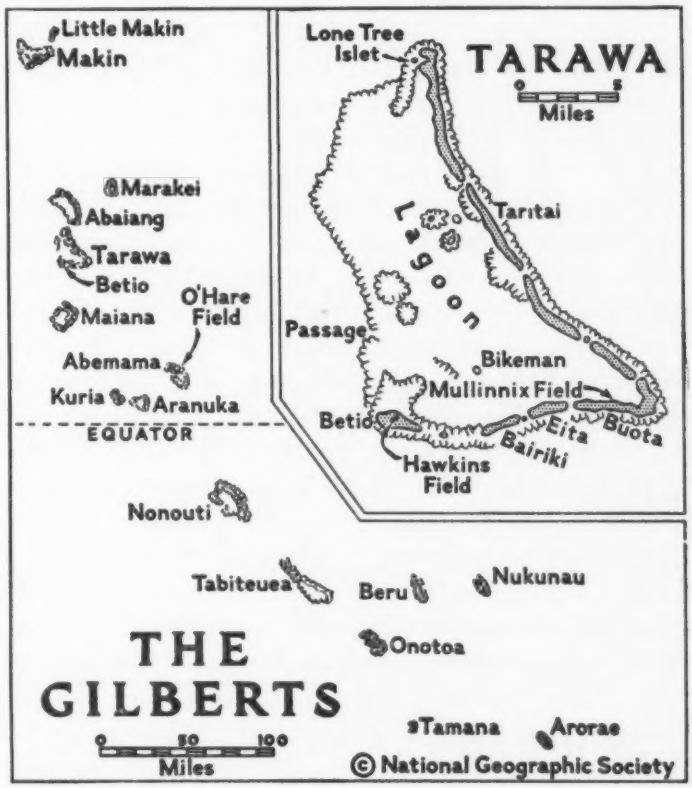
PLATE 17


Lord Howe Island, E b S ½ S. 6 Leagues
Norfolk Island, E S E 5 Leagues
Thus Appears Hopper's Island, N b W. 8 Miles; very Low Land
Henderville's I. N E b E 5 Miles
Woodweil I. N N E 6 Miles

Captain Marshall's Sketch of Apemama and other Islands

Reproduced from the Chart of the Scarborough's *route in* The Voyage of Governor Phillip to Botany Bay in 1789

discover the Antartic or Australian Continent which geographers since the Middle Ages supposed to run round the world below the Tropic of Capricorn. Fitting out two ships, *Capitana* and *Almiranta*, at Callao in Peru, Quiros sailed through the Paumotus and Marquesas in the early months of 1606, laid a due west course that passed between the Ellice and Gilbert groups, and made Taumaco in the Duff Islands. Here a native



Reproduced by permission of the National Geographic Society

chief gave him such detailed information of immense islands to the southward that he steered in that direction. The New Hebrides, overlapping each other, appeared to be continuous; and when Quiros reached a mountainous island with a huge bay, he cried 'Australia at last!' Naming the bay after Saints Philip and James, and the island, Tierra Austrialia [*sic*] del Espiritu Santo—'The Australian Land of the Holy Ghost,' he took possession in the name of Philip III and proceeded to celebrate Spain's acquisition of the supposed Australian continent.

After remaining thirty-five days in the great bay of Espiritu Santo, Quiros resumed his voyage, but was parted from his second in command, Luis Vaez de Torres, in a storm. Torres sailed the *Almiranta* to the Louisiades, along southern Papua, through the straits that appropriately bear his name, and by way of the Dutch (then the Portuguese) East Indies, to Manila. Quiros in the *Capitana* made the best of his way home, and while working north toward the zone of westerlies, passed between the Gilberts and Marshalls. Navigators at that time had no means except dead reckoning, of keeping track of longitude; but they had become quite good at finding latitude from a noon sight of the sun. Gaspar de Leza, chief pilot (i.e. navigating officer) of *Capitana* kept a journal which has been preserved; and the following entries strongly suggest that he sighted Makin on 8 July 1606. After sailing north for several days, from a point about half way between Santa Cruz and the Duff Islands, the wind shifted so *Capitana* could make north by east, and on 3 July she crossed the Line, according to Leza's calculations. The longitude, I should say, was about 167° to 168° E. On 4 July she made eight leagues (about twenty-five and one-half miles) northeast by north. On the fifth the pilot's noon latitude was 1° 30′ N, and the ship made twenty leagues (sixty-three and one-half miles) northeast. The same course continued the next day; noon latitude 2° 15′ N. Becalmed 7 July. 8 July: 'I shot the sun in 3° 15′ N, course NE. On this day we sighted a small island 4 or 5 leagues [twelve and three-quarters to sixteen miles] ahead, in 3° 45′ N. It was not high.'

Sounds like Makin to me! And, although they continued on a northeast or east-northeast course for days, and then swung back a bit west of north, they sighted no more islands. Unless the pilot's latitude was away off, Makin is the only island he could have sighted, if he saw no other.[6]

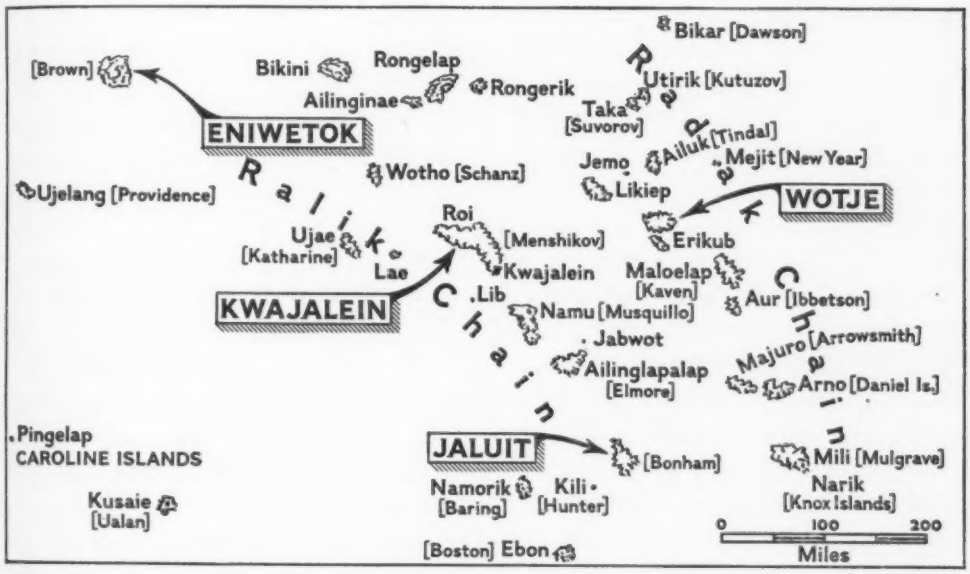
During more than a century and a half, 1606-1762, the South Pacific was almost empty of ships. Europeans preferred to trade with the far East by way of the Cape of Good Hope. Every year, to be sure, a Spanish galleon sailed from Acapulco to Manila and back; but the route of the outward passage was laid north of the Marshalls, and that of the homeward passage passed north of Hawaii, following the trade winds. There was no reason for anyone to visit the Gilbert and Marshall Islands, and probably nobody did. Even the Solomons disappeared from the charts. Spain never occupied the Marshall Islands, or made any use of them, except to hold Germany up for a good stiff price to clear her title.

[6] This Journal is translated by Sir Clements Markham in *The Voyages of Quiros*, II, 397 (Hakluyt Society Publications, 2d Series XV, 1894).

II. *Early English Discoveries*[7]

Interest in the broad reaches of the Pacific revived after 1762 when an English task force under Vice Admiral Sir Samuel Cornish seized Manila. It was restored to Spain in the ensuing peace, but the event seemed to awaken European navigators from their long indifference to the Pacific Ocean. Even the Hawaiian Islands had as yet been seen by no European.

Commodore John Byron, R.N., grandfather to the famous poet, was the first to carry the ball. 'Foul-weather Jack,' as he was called in the Royal Navy by reason of his hard luck with the elements,[8] had been



Marshall Islands

Reproduced by permission of the National Geographic Society

wrecked on the desolate southern coast of Chile at the age of eighteen, and he was twenty-three before he reached home. In the Seven Years' War he commanded H.M.S. *America,* and had charge of the shore party that demolished the forts of Louisbourg, Cape Breton Island. After that war was over, he was given command of the frigate H.M.S. *Dolphin,* and in 1764 set forth on a voyage of discovery. He passed through the Paumotu

[7] John Hawkesworth, *An Account of the Voyages undertaken for making discoveries in the Southern Hemisphere . . . by Commodore Byron, Captain Wallis, Captain Carteret and Captain Cook* (London, 1773), 3 volumes.

[8] His elder brother William, the fifth Lord Byron, was known as the 'wicked Lord,' and his son, John Byron, a notable debauchee, as 'mad Jack.' Lord Byron the poet was son of 'mad Jack' and broke all family records.

Archipelago and the Society groups, but sheered off from almost every island that he sighted. Perhaps the winds were favorable and he feared his sudden good luck would change; possibly he wanted to make a record, which he did—around the world in eighteen months. Curiously enough he managed to sail past or through the Gilberts in 1765 without sighting more than one of them, Nukunau, to which he affixed his name; and Byron Island it is still called on some of the charts. To the Admiralty this voyage was a disappointment; but it was about the last fun at sea that the Commodore ever had. In the War of American Independence his foul weather jinx returned; and the fleet that he commanded sailing westward in pursuit of Admiral d'Estaing, was all blown to hell by a series of gales.

'He had no rest on sea, nor I on shore,' was Lord Byron's egoistic epitaph for his grandsire, 'Foul-weather Jack.'

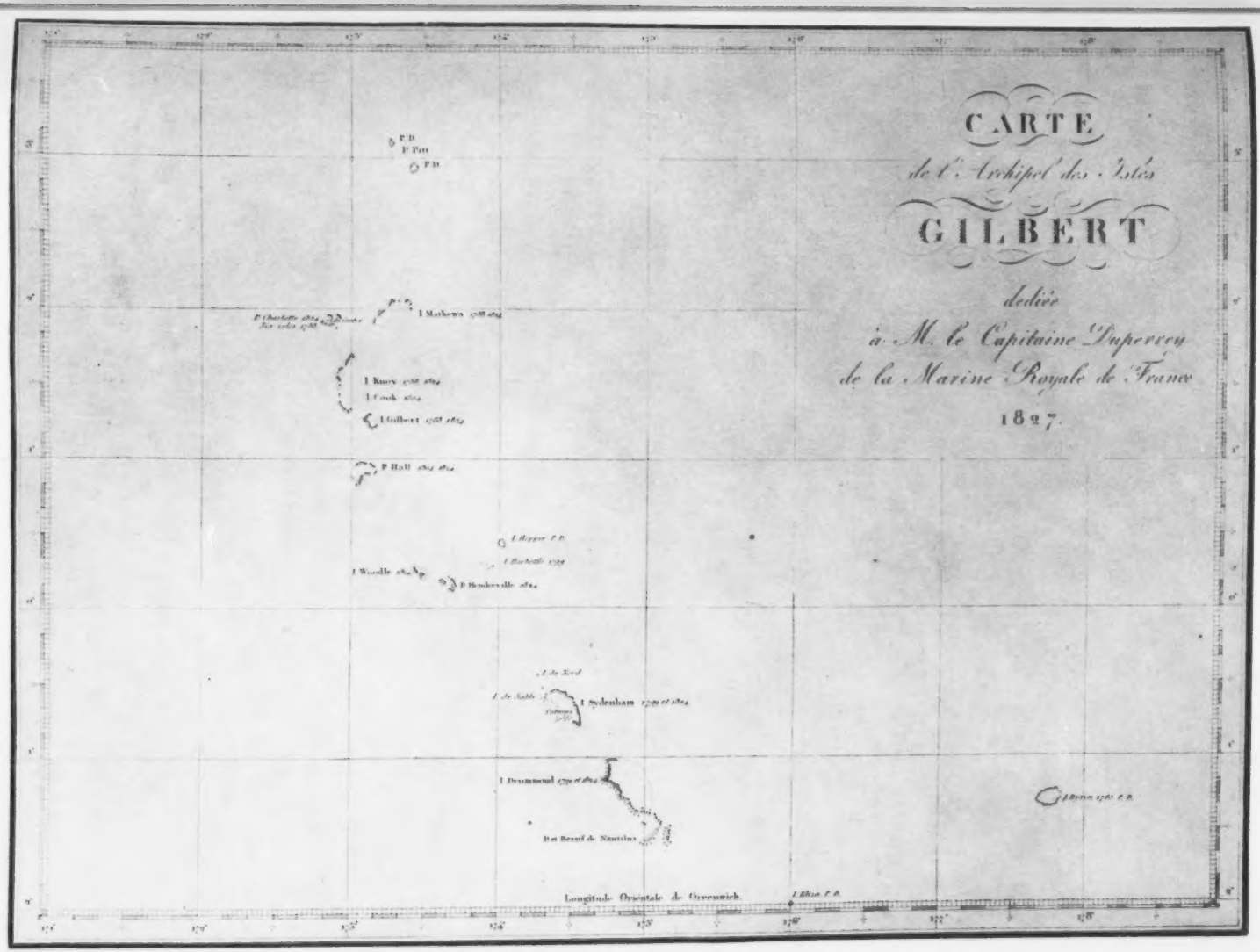
When H.M.S. *Dolphin* returned without much to show for her voyage, the Admiralty hopefully refitted and sent her forth again, under the command of a brilliant young lieutenant of the Royal Navy named Samuel Wallis. At the age of thirty-one he had commanded H.M.S. *Prince of Orange* in the Wolfe-Saunders attack on Quebec. The *Dolphin* was accompanied by the sloop-of-war H.M.S. *Swallow* under the command of an even younger naval officer, Lieutenant Philip Carteret, who had been with Byron in the *Dolphin*. Wallis and Carteret sailed together from England in 1766, parted after threading the Straits and went their separate ways; but between them they opened up the South Pacific. Wallis explored the Paumotus and the Society Islands; it was he who gave currency to the name Otaheite, by which Tahiti was known down to our day. He appears to have missed the Samoa group altogether;[9] but at a position which he gave as latitude 13° 18′ S, longitude 176° 20′ W, Wallis came upon the beautiful island of Uea, which still bears his name. Later in the voyage he passed near the islands that he identified as the Pescadores of the old Spanish charts, and sighted others. From the positions he gives,[10] there seems to be no doubt that he passed Rongerik and Rongelap of the northern line of Marshalls.[11] The year was 1767.

Philip Carteret in H.M.S. *Swallow,* in the meantime, had discovered Pitcairn Island of 'Mutiny in the *Bounty*' fame, and thence, sailing south of the Fijis and New Caledonia, entered the Coral Sea. There his great

[9] These were discovered and reported on by Louis de Bougainville after whom the island of the Solomons is named, in 1768, although a Dutchman may have sighted some of them in 1722.

[10] Latitude 11° N, longitude 167° 30′ E; latitude 11° 20′ N, longitude 167° 02′ E.

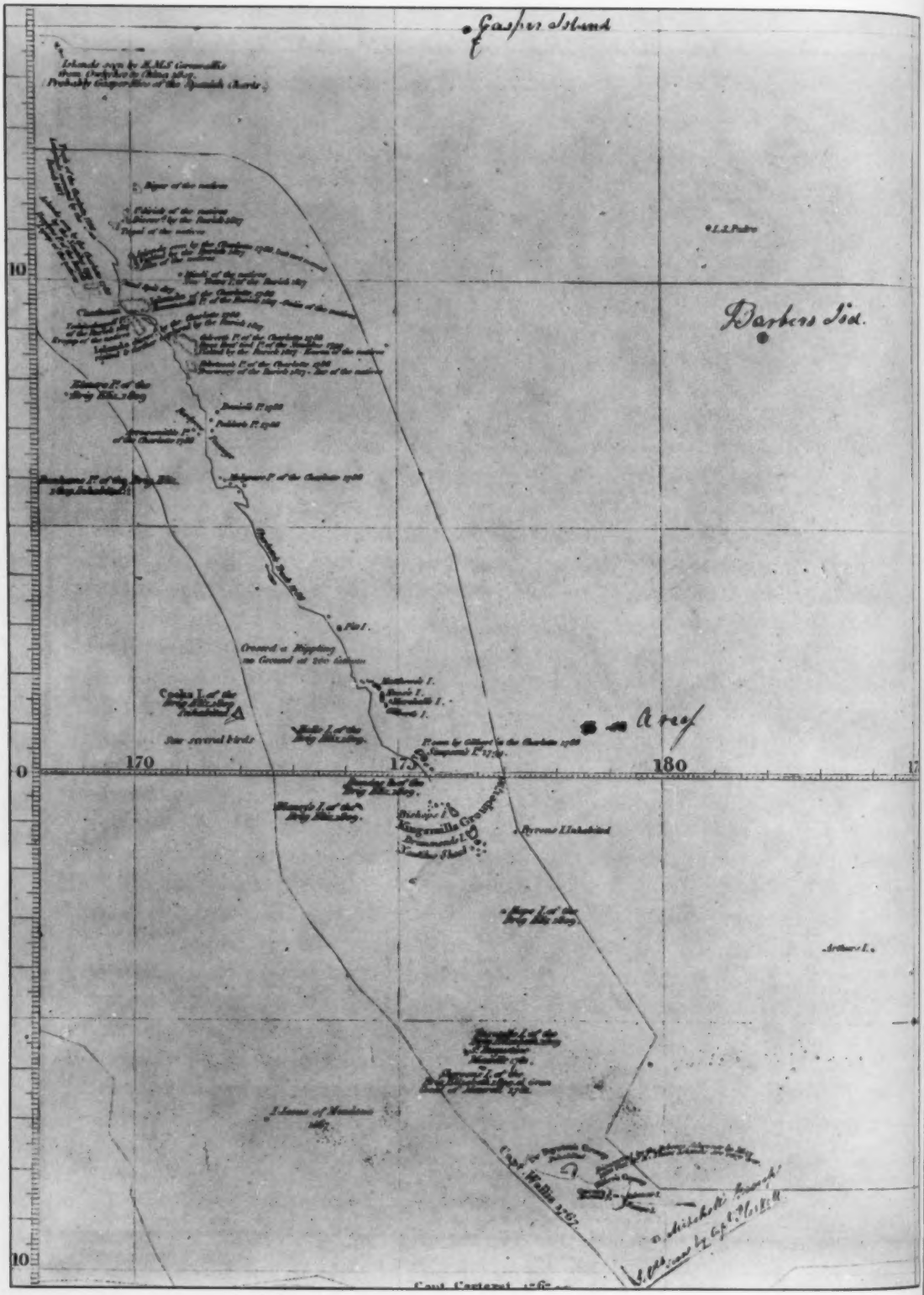
[11] Dauphin, one of the several names of Rongerik, was probably given to it by some French navigator of the nineteenth century because the *Dolphin* is so called in the French translation of Hawkesworth's *Voyages.*



Krusenstern's Chart of the Gilbert Islands

Reproduced from the copy of his Atlas de l'Océan Pacifique, *1827, in the Harvard College Library*

PLATE 19



Section of Arrowsmith's *Chart of the Pacific Ocean*
Reproduced from the Harvard College Library copy, c. 1820

discovery was the existence of a strait, which he named St. George's Channel, between New Britain and New Ireland. Earlier navigators supposed these to be one continuous island. Carteret named New Ireland, too.

III. *Captains Gilbert and Marshall*

Twenty years elapsed, in which important discoveries were made in the South Pacific by three French navigators, Bougainville, La Pérouse and D'Entrecasteaux, and by the great Captain James Cook. But all four explorers missed our islands. Then came two obscure English seamen, not otherwise known to fame, who have left their names, probably for all time, on the Gilberts and Marshalls. The story of their voyage is told in two rare books, *A Voyage from New South Wales to Canton, in the year 1788, with Views of the Islands Discovered, by Thomas Gilbert, Esq., Commander of the Charlotte* (London, 1789); and *The Voyage of Governor Phillip to Botany Bay,* of the same date.[12]

The *Charlotte* and *Scarborough* were English merchant ships chartered by the Honourable the East India Company to take three hundred and thirty-four convicts with a Royal Marine guard, and the Marines' wives,[13] to Botany Bay, Australia, and thence to Canton in order to load tea for England. William Marshall[14] was master of the *Scarborough,* and Thomas Gilbert of the *Charlotte.* Both sailed from England as part of the convoy under Captain Arthur Phillip, R.N., first Governor of New South Wales, which brought the first convict settlement to Australia. The convoy, under escort of H.M.S. *Sirius* and *Supply,* sailed from England 13 May 1787, and arrived at Botany Bay 18 January 1788. Gilbert and Marshall, after discharging their unwilling passengers at Botany Bay, viewing the foundation of Sydney, and taking in wood, water, jerked kangaroo meat and such other provisions as aboriginal Australia afforded, sailed for Canton on 6 May 1788.

This was probably the first time that anyone had attempted to sail from Australia to China. It may seem strange that the two captains should make such a wide sweep to the eastward as to encounter the Marshalls. But the passage through the Torres Strait was one that baffled even Cook; the Moluccas were full of pirates; China Strait between New Guinea and the Louisiades was not discovered until 1873 by Captain Moresby; and Lieutenant Shortland (after whom Shortlands Harbor is

[12] The Phillip book contains an abstract of Marshall's log in an appendix, but I find no record of any narrative of his being published.

[13] 'Forty women, wives to the Marines, permitted to go out with the garrison.' *Voyage of Governor Phillip,* p. viii.

[14] There is some doubt as to Captain Marshall's Christian name. Most writers call him William, but in the 'Chart of the Track of the *Scarborough*' in Governor Phillip's *Voyage,* he is called John.

named) elected to try the Solomons-New Ireland route. Our captains probably figured on making a good easting in the westerly winds of south latitudes, in order to enjoy a fair slant in the northeast trades to Canton.

After calling at Lord Howe Island and sighting Norfolk Island, they anchored on 17 June off an atoll whose position Gilbert gives as latitude 00° 02′ N, longitude 175° 54′ E. A canoe came out filled with natives, who 'viewed with great attention the sides of the ship, which I had caused to be painted red, some of the voyages I had perused pointing out that colour as the most pleasing to the natives of these climates.' Some natives came aboard and 'appeared facetious.' It seems probable that this atoll was Apemama in the Gilberts, although it might have been Aranuku. Gilbert's longitudes were always a degree or two out; for he had no chronometer, and used the complicated method of lunar observations, directions for which were still found in Bowditch when the writer first went to sea.

The *Scarborough* on 18 June came up with an island whose position Captain Marshall gave as latitude 00° 05′ N, longitude 173° 43′ E. He named it Hopper's Island. 'Sounded, and got no ground,' he reports—a frequent experience in those waters. He sighted another six miles to the southwest, which he named Henderville's, and a third, three miles northwest of that, which he named Woodle's. There is no doubt that these three were Apemama, Aranuka and Kuria. Marshall's names are still on the Admiralty charts; presumably they were called after his shipmates. His sketches of these islands, here reproduced (Plate 18) were engraved on the chart of the *Scarborough's* course in *The Voyage of Governor Phillip.* These, and Gilbert's more pretentious sketches, are the earliest illustrations we have of the Gilbert Islands.

Proceeding northward, though not always in company, the two ships on 20 June made an atoll whose position Gilbert gives as latitude 1° 42′ N, longitude 175° 01′ E, and Marshall as latitude 1° 48′ N, longitude 173° 03′ E. Of this atoll Gilbert made a sketch, a copy of which is here reproduced (Plate 17). He named it Matthew's Island after the owner of the *Charlotte.* Which atoll does this represent? According to one authority, it was Apaiang. The name Matthew, however, is now attached to Marakei Atoll, because the French explorer Captain Louis Duperrey, who passed through the Gilberts in the frigate *La Coquille* in 1824, so identified it. The sketch, like all made by old-time navigators, greatly exaggerates heights of land. But the general lay-out of the islands suggests that Gilbert's Matthew was Tarawa, the island he calls 'Point William' being Betio (Bititu) Island, and the lagoon, Charlotte Bay. More-

over, any ship sailing north from Apemama would hardly have made Marakei without seeing Tarawa. Gilbert's description of the island follows:

> Being now abreast of this island, the extremity ending in a beautiful clump of trees, I hauled up to look at the bay. It appeared to be safe and commodious, sheltered by a long reef running parallel with the island, with two large inlets into the bay. The reef is about three quarters of a mile from the beach, and has several small islands which appear like flower pots.

This description certainly sounds like Tarawa; but, not having seen Marakei, I cannot say whether or not it and the sketch would suit that atoll better.

From Matthew's Island the *Charlotte* proceeded for a day—by what course the Captain does not say, but the wind was easterly—and on 21 June came across what he calls a chain of three islands, which he names Gilbert's, Marshall's, and Knox's.[15] His sketch shows them as three wholly separate islands. Were these all parts of Tarawa? I suggest that they were Makin and Little Makin seen from the eastward, with Butaritari appearing as a separate island from the rest of Makin; but most authorities think that Gilbert and Marshall missed Makin altogether. Whatever it was, the *Charlotte* hove to, and natives were enticed aboard by the offer of nails and hoop iron. There was a momentary panic among the aborigines when the spanker boom jibed, knocking some of them overboard; but confidence was soon restored and Captain Gilbert obtained a liberal assortment of coconuts and souvenirs.

For five days, the wind being light and the course northerly, no more islands were encountered. On 26 June Gilbert discovered three low ones which he named Daniel's, Pedder's, and Arrowsmith's, after some of his shipmates. The position he gives as latitude 7° 19′ N, longitude 172° 30′ E. The first two have been satisfactorily identified as Arno Atoll and Arrowsmith as Majuro Atoll, in the Radak Chain of the Marshalls. In the meantime, on 25 June, Captain Marshall in the *Scarborough* had discovered Mille (the position he gives is latitude 6° 29′ N, longitude 171° 28′ E), and named it Lord Mulgrave's Range, after a then celebrated captain in the Royal Navy. 'Sounded with 100 fathoms, no ground.' The skipper would certainly have needed a long lead line to hit bottom there!

Charlotte sailed through the passage between Majuro and Arno,[16] and on 28 June made Aur Atoll, which he named Ibbetson's Islands, again

[15] Knox or Knoy appears on some nineteenth-century charts, including Krusenstern's reproduced here, as a synonym for Tarawa.

[16] Fordyce's Passage on the Arrowsmith Chart.

after a shipmate. The position he gives as latitude 8° 58′ N, longitude 171° 41′ E.[17] On the same day he discovered the important atoll of Maloelap, which he called Calvert's Island. Calvert is supposed to have been some person influential in the East India Company; nothing to do with Baltimore or whiskey. On 29 June Captain Gilbert raised both Erikub and Wotje, which he called Chatham's Islands, doubtless after the great Earl. On the last day of June, he reached an atoll which he identified as one of the Spanish Pescadores rediscovered by Wallis. Probably it was Utirik, whose English name, Button Island, is attributed to this 1788 voyage in later charts. That was the last of these islands that Captains Gilbert and Marshall sighted. They laid a course for China and dropped anchor off Macao on 9 September 1788.

Owing to the publication of Captain Gilbert's account of his voyage and of Captain Marshall's log in 1789, these two groups eventually became known on English charts as the Gilberts and Marshalls. Krusenstern also used the terms Gilbert Archipelago and Marshall Archipelago in his *Atlas de L'Océan Pacifique* of 1827, and that fixed them in standard Pacific nomenclature. It will be observed that the two captains discovered less than half the atolls of each group, and none whatever of the Ralik Chain of the Marshalls (Radak and Ralik mean east and west in the Micronesian language). The 'Chart of the Track of the *Scarborough*' in Governor Phillip's book[18] shows both Gilberts and Marshalls in one continuous line. Captain Gilbert thought these islands would be very useful for ships on an Australia-China voyage to obtain water and fresh provisions; and although the 'innocence' of the natives at a much later time suggests that few ships called, the route was followed as long as merchant vessels used sail. Before me, as I write, is on old Norie 'blue-back' chart of the South Pacific, dated 1888, on which the track of the *Lucy A. Nickels* and other ships following approximately the Gilbert and Marshall route from Sydney to China, has been laid down by shipmasters of Searsport, Maine.

IV. *Merchant Ship Voyages*, 1792-1824

During the generation that followed the Gilbert and Marshall voyage, a number of American and British merchant ships, in transit or searching for trade openings in the Pacific, discovered or at least named various islands in and around these groups. Several of these voyages are indicated

[17] Marshall discovered an atoll on the twenty-eighth whose position he gives as latitude 8° 59′ N, longitude 170° 24′ E. It is not clear whether this was Aur or Maleolap.

[18] *Voyage to New South Wales*, p. 247.

on Aaron Arrowsmith's Chart of the Pacific Ocean, a section of which is here reproduced[19] (Plate 20).

Captain Bond in the British ship *Royal Admiral* in 1792 discovered Namorik, Namu and Ailinglapalap Atolls in the Ralik Chain of the Marshalls, and named the first two Baring and Musquillo. Eniwetok, westernmost atoll of the Marshalls and potentially the most important, was discovered by Captain Thomas Butler of the British sloop *Walpole* on 13 December 1794. He named it Brown's Range after the factor of his firm at Canton. Eniwetok was carefully examined and charted by Captain Fearn in the snow *Hunter,* 1798. Ujelang ('middle of heaven') Atoll south of Eniwetok, was discovered by the British ship *Providence* in 1811 and given her name.

Captain John Fearn in the snow *Hunter* in 1798 discovered Nauru and named it Pleasant Island. Not so pleasant now, or even long since. Captain James Taber of the whale ship *William Tell* of Sag Harbor, Long Island, 'made Pleasant Island' on 4 January 1853, and was informed by a beachcomber that the natives had lately captured the brig *Inga* of New Bedford, and massacred all hands but one.[20]

Captain Charles Bishop in the British brig *Nautilus* in 1799 named the southern Gilberts the Kingsmill Group after an officer or owner of his ship. This name is still found on charts. Nonuti, Bishop called Sydenham's Island; Apemama, Roger Simpson's Island; and Tabiteuea, Bishop's and Drummond's Islands. Presumably these were shipmates, or owners of the *Nautilus.* He then proceeded to the Marshalls, and gave to Maloelap the curious name Bass Reef-tied Island.

Kwajalein, said to be the world's largest coral atoll, and the first of the Marshalls to be occupied by the United States in 1944, was discovered by Captain Mertho of the British ship *Ocean* in 1804. He also discovered the nearby Ujae and Lip Atolls, and had the pleasant idea of naming these three Lydia, Catherine and Margaret Islands, presumably after his daughters, or friends. It is not clear whether he also discovered Ocean Island, and named it after his ship.

Kusaie, easternmost of the Carolines was described in 1804 by the ship *Nancy* of Boston, Captain Crocker, who named it Strong Island. In various printed accounts his name has been distorted to Crozer; but there is

[19] The engraved title-page of the copy of this Atlas in the Harvard College Library gives the date as 1798; but obviously it was issued over twenty years later, as the map enters voyages of 1819.

[20] New Bedford *Mercury,* 29 April 1853, copied by the Central Pacific Islands Project, W.P.A., under the direction of Commander John W. McElroy U.S.N.R. The useful extracts from old newspapers recovered by this Project are deposited in the Peabody Museum of Salem and the Office of the Geographer, Department of State.

no doubt that Captain Crocker is the man, because an extract from his log was printed in several contemporary newspapers.[21] He describes Kusaie as 'quite high,' and he gives the position, which he obtained by upper transit of a star and by 'lunars,' as latitude 5° 11′ N, longitude 162° 58′ E. 'Having no such Island laid down in any of my Charts (India Pilot) I conclude it must be a new discovery, and as such I name it *Strong's Island,* in compliment to Caleb Strong, Esq., Governor of the Commonwealth of Massachusetts.' There is, however, much reason to believe that Captain Crocker was not even the first American to sight Kusaie. Salem newspapers for 1802 and 1803 contain an abstract log of one Captain Ray of the ship *Hope,* which entered Salem 4 November 1802 after a three years' voyage around the world. Captain Ray reported having discovered on 22 December 1801, 'an island about 7 leagues in length, which appeared to be well covered with wood,' in latitude 2° S, longitude 166° 21′ E, and on the twenty-sixth, 'another island about 4 leagues in length' at latitude 5° 41′ N, longitude 163° 40′ E. The first must have been Nauru, and the second, Kusaie, the true position of whose northeast point is 5° 22′ N, 163° 01′ E.[22]

The British brig *Elizabeth,* Captain Patterson, sailed through the Ellice, Gilbert and Marshall Islands in 1809 and renamed a considerable number, such as Cook's for Tarawa, Hall's for Maiana, Dundas's for Apemama. Arrowsmith made the mistake of assuming that these were new discoveries, and placed them on his chart to the leeward of the Gilberts because Gilbert and Marshall had located the Gilberts too far to the eastward. The names Cook and Hall are still on the map. Captain Patterson then discovered Jaluit Atoll[23] in the Marshalls, which he named Banham's or Bonham's Island, and to Ailinglapalap Atoll he gave the new name Elmore.

Although at least one of the Ellice Islands had been discovered very early, it was long before there was any systematic exploration of the group. Captain Arent Schuyler De Peyster, an American — probably the son of a New York loyalist — who commanded the British brigantine *Rebecca,* discovered Funafuti and Nukufetau in 1819. He named the latter after himself, and called the group the Ellice Islands after a member of Parliament who was his friend and benefactor. Charles Wilkes, commander of the United States Exploring Expedition, refers to this group as the Depeyster Islands in 1841.

[21] Salem *Gazette* 12 November; Boston *Columbian Centinel* 9 November 1805, as copied by the Central Pacific Islands Project.

[22] Salem *Gazette,* 5 November 1802 and *Register,* 14 April 1803, as copied by the Project.

[23] Jaluit, which is accented on the 'u,' means 'something lying across.'

Captain George Bennett of the Nantucket whaler *Independence* discovered the two southernmost Ellice Islands, Nukulalai and Nurakita, in 1821, and named the first after himself and the second, Mitchell Island after his owner. Captain George Ray of the American ship *Nantucket* discovered Ebon Atoll, southernmost of the Marshalls, in 1824, and named it Boston Island after his home town or port.

These three atolls, Nukulalai, Nurakita and Ebon, are the only ones of the Ellice, Gilbert or Marshall groups that appear to have been discovered by American whalers. As Mr. S. Whittemore Boggs, the Geographer of the Department of State, has shown,[24] the common statement that 'over two hundred islands' of the Pacific were discovered by Yankee whalemen, is a gross exaggeration. The true figure is nearer twenty than two hundred. It is true that whaling ships from Australia and New England were the principal vessels that visited the Gilbert and Marshall Islands in the half century from 1820 to 1870, and they did them little good. For instance, the Boston papers of 1824 tell of a 'horrid affair' at Mille Atoll, which they still call the Mulgrave Islands. The crew of the whaling ship *Globe* of Nantucket mutinied and murdered the master and mates. They then took her into Mille lagoon with the intention of settling down on the atoll, but quarrelled over the loot and the women, hanged the steward, and shot the chief mutineer — a New Yorker, as the Boston papers hasten to add. Meanwhile a few men and boys left aboard the ship cut her cables, made sail and escaped, saving both the ship and their necks.[25]

An important French voyage may be mentioned before we proceed to the Russians.

Captain Louis I. Duperrey of the French Navy, who had sailed around the world with Freycinet in 1817-1820, made a periplus of his own in 1822-1825, commanding the corvette *La Coquille*.[26] She passed through the Gilberts where Duperrey examined Nonuti with particular care, and then sailed northwesterly, noting 'les îles Boston' [Ebon Atoll]. She called at Jaluit, where an island still bears the name La Coquille, and made a considerable stay at 'l'île Oualan' [Kusaie], whose discovery he at-

[24] 'American Contributions to the Geographical Knowledge of the Central Pacific,' *Geographical Review*, XXVII (April 1938), pp. 177-192. The exhaustive research of the W.P.A. project has only confirmed Mr. Boggs's conclusion. Doubtless many whaling masters believed themselves to be Columbuses of the Pacific. For instance, the Boston and Salem newspapers of 18 March 1829, devote much space to alleged discoveries in the Gilberts, Ellices and elsewhere by Captain Plasket of the whaling ship *Independence;* but all of them had been discovered before.

[25] Boston *Marine Journal*, 18 October 1824, copied by the Project.

[26] I have not found that part of Duperrey's *Voyage autour du Monde* which contains his narrative, but have used the précis in Duponchel, *Nouvelle bibliothèque des Voyages* (Paris, 1841), VI, 296-302. Duperrey's Atlas contains (plate 49) a beautiful colored engraving of Kusaie, with *La Coquille* being towed into Lele Harbor by her barge.

tributed to 'Captain Crozer' [Crocker] in 1804. 'The women,' Duperrey noted, 'are pretty and well built, they are notable for their white teeth, sparkling eyes, and still more for a natural modesty.' Duperrey predicted for Kusaie a great future, as a port of call for vessels sailing from Australia to China; for it was very fertile and produced all sorts of food crops. I suspect that he was also responsible for the French names (Roi and Namur) on certain islands of Kwajalein Atoll; but of this I have no real evidence.

v. *The Russians*

In the early part of the nineteenth century, Russia made a definite attempt to participate in the sovereignty of lands bordering on the Pacific; and although she never pushed her efforts continuously, and eventually liquidated all claims east of Siberia when she sold Alaska to the United States in 1867, the memory of the Russian voyages is perpetuated in the nomenclature of the Marshall Islands.[27]

None of the men who made discoveries for Russia in the Pacific were Russians; for they were inland people, with little aptitude for the sea. Consequently, when the Emperors ordered voyages of discovery, they employed either Dutchman like Vitus Bering, or members of other races who had become Russian subjects. Thus, Adam Ivanovitch Krusenstern (1770-1846), who made the first Russian voyage around the world, was an Estonian. The Emperor Alexander I sent him forth in 1803, commanding the corvettes *Nadejda* and *Neva*,[28] to find a direct route between European Russia, China and Alaska.

Krusenstern was an officer of the Russian Navy, and a competent hydrographer. Although he never touched at the Marshall Islands in his voyage around the world, the account of which appeared in an English translation in 1813, he compiled an *Atlas de l'Océan Pacifique* (1827 and later edition) which had a considerable influence on Pacific cartography and nomenclature. He also brought to Europe one of the first accounts of Japan, and his exploration of the Alaskan coast led to the first successful Russian colony being established there.

One of the junior officers on Krusenstern's voyage around the world was young Otto von Kotzebue (1787-1846), son of a German dramatist who left Weimar and became a Russian subject because of rivalry with Goethe. As soon as the Napoleonic Wars were over in 1815, the Chancellor of the Empire, Count Rumiantsov, fitted out at his own expense a

[27] N. Monasterev and Serge Terestchenko, *Histoire de la Marine Russe* (French translation: Paris, 1932) is a good general authority.

[28] The voyage took almost three years and the two vessels were at sea four hundred and forty-five days, all told.

brig called the *Rurik,* and chose as her commander this twenty-eight-year-old lieutenant of the Imperial Navy. The *Rurik* measured one hundred and eighty tons, according to the system then in vogue; and from Choris's pictures she seems to have been not over seventy-five feet long; but she mounted eight guns on her main deck, and in her complement of thirty-two officers and men, place was found for men of science, arts and letters: Adelbert von Chamisso, German naturalist and literateur, best known as the author of *Peter Schlemihl,* Ivan Escholtz, an Estonian, surgeon and assistant naturalist; and Login (or Louis) Choris, Russian painter of German origin who had just turned twenty. They were all young and gay, except the First Lieutenant Gleb Simonovitch Schischmarev, a big moon-faced Russian who was an excellent seaman. Kotzebue and Chamisso wrote narratives of the voyage, and Choris painted pictures, which tell us more of these islands, and of other parts of the Pacific, than the accounts of any Pacific voyage between those of Captain Cook and Commodore Wilkes.[29]

The *Rurik* departed from Kronstadt 30 July 1815, and approached the Marshall Islands very leisurely by way of Cape Horn and the Marquesas. Her first landfall in the Marshalls, on 21 May 1816, was on Utirik and Taka Atolls of the Radak Chain. These were the Button Islands of Gilbert and Marshall, the Pescadores of the early Spaniards; and they had also been seen by Wallis. Kotzebue, believing he had discovered them, named them Kutúsov Island, after the Russian hero of the retreat from Moscow, familiar to every reader of *War and Peace;* and Suvórov Island, after the Russian general who had run the French out of Italy in 1799.[30] Chamisso gives the position of the channel between them as latitude 10° 11′ 20″ N, longitude 179° 50′ 37″ E, which was not far wrong, although he needn't have bothered about the seconds. The young men did not stop as they were in a hurry to get on to Kamchatka; but they returned next year after a memorable cruise which has left Kotzebue's name on the coast of Alaska.

On 14 December 1816 the *Rurik* sailed from 'Hana-ruru' (Honolulu), sighted Johnston Island on the twenty-first, and on 1 January 1817 made a landfall in the Marshalls. This was Mejit, and Kotzebue named it New

[29] *A Voyage of Discovery into the South Sea and Beering's Straits in the Years 1815-18, by Otto von Kotzebue, in the ship* Rurick (English translation: London, 1821), 2 volumes. Adelbert von Chamisso, *Reise um die Welt mit der Romanzoffischen Entdeckungs-Expedition in den Jahren 1815-18 auf der Brigg* Rurik (I have used the 1842 ed., vols. I and II of Chamisso's *Werke*); Louis Choris, *Voyage Pittoresque autour du Monde* (folio, with text by Chamisso and George Cuvier, Paris, 1822); Choris, *Vues et paysages des régions équinoxiales receuillis dans un Voyage autour du Monde* (Paris, 1826), folio. Kotzebue's charts of Wotje and the Marshall Islands are reproduced on Plates 21 and 23.

[30] Not to be confused with Suvarov Island in another part of the South Pacific, which was named after the Russian ship which discovered it in 1814.

Year's Island. He gives the position as latitude 10° 08′ 27″ N, longitude 170° 55′ 14″ E, from which Chamisso ventured to dissent—when he reached home.[31] Natives came out in canoes; the yawl was sent ashore in charge of Lieutenant Schischmarev and the gig under painter Choris; and a lively trade ensued in coconuts and mats for hoop iron.

Proceeding westerly, they came upon a much more considerable atoll, Wotje, which Kotzebue named Rumiantsov, after his patron the Chancellor of the Empire.[32] On modern charts it is spelled Romanzov. Here the *Rurik* made a prolonged stay. She entered the lagoon by the southwesterly passage that still bears her name, and anchored over against it at a spot still called on the charts Christmas Harbor, because it was there the *Rurik* celebrated Russian Christmas—6 January of our calendar. The boats went ashore; the natives, few in number, friendly but timid, served them pandanus juice in coconut shells. Kotzebue let loose on the beach a billy-goat (shipped at Honolulu) which scared the daylights out of the natives; and the scene of this surprise is still called Goat Island. Lieutenant Schischmarev made a reconnaissance of the lagoon in the yawl, and returned with news that Otdia Island, at the east end of the lagoon, was both populous and friendly; women had emerged from the coconut groves and given the Russian sailors garlands of flowers and shells. Skipper Kotzebue then weighed anchor and beat up the lagoon to Otdia Island where he spent almost three weeks (20 January to 7 February 1817). 'We lay here as secure as in the finest harbour,'[33] he wrote. Everything went well with 'these kind-hearted children of nature,' as he called the natives; for they had not yet been abused, kidnapped or enslaved by white renegades or yellow bastards. The chief, Rarick by name, became Kotzebue's good friend; they rubbed noses and swapped names Polynesian fashion, while Chamisso made a similar exchange with Laghidiak, a lesser chief. There was a momentary unpleasantness, however, when the Russians gave Rarick a cup of hot tea to drink. The natives said that they had never seen an European. They were still building 38-foot canoes with no imported tools except a length of strap iron which had come ashore on a baulk of driftwood; and although 'the women seemed modest,' wrote

[31] In the text to Choris's *Voyage pittoresque*, Chamisso says it was in latitude 10° 05′ N, longitude 171° 10′ W. He states the native name as Medid; Kotzebue as Miadi. The correct position is 10° 17′ N, 170° 53′ E.

[32] It had been discovered by Gilbert in 1788 and named one of the Chatham Islands. Bishop in 1799 called it and Erikub the Junction Islands.

[33] Kotzebue, *Voyage of Discovery* (English translation, 1821), II, 52. There is an engraving of a domestic scene on page 63, drawn by Choris, whose *Vues et paysages* (1826), and *Voyage pittoresque* (1822) contain several charming colored lithographs of scenery, trees and people of 'les Iles Romanzoff' (Wotje).

Chamisso, 'a bit of iron sufficed to make these savage beauties succumb.' If Choris's paintings do not lie, they were beauties indeed. Kotzebue and Schischmarev made a survey of Wotje which is still the basis of our charts, and one of the passes to the lagoon still bears the name of the moon-faced Russian lieutenant.

The *Rurik's* next call was at Erikub Atoll, which Kotzebue named Tschitchagov, after the Russian Minister of Marine, corresponding to our Secretary of the Navy. He then picked up Maloelap,[34] one of the Calvert Islands of Gilbert, and sailed into the lagoon. He named this atoll Saltikov, and the largest island in it Araksheëv, after the stern and efficient Russian general who was the bosom friend of the Emperor Alexander I; he states that its native name was Torua. This is, of course, Taroa, where the Japanese constructed a landing field which received considerable attention from our bombers in January 1944. To the southward, Kotzebue found Aur Atoll,[35] which he named Traversé, after a Russian nobleman. Here he had the good fortune to pick up Kadou, a shipwrecked exile from Kusaie, who knew European usages, came aboard and proved a valuable interpreter. The people of Aur invited the Russians to join them in a war against Arno and Majuro Atolls, but they declined; and the *Rurik* sailed on to Ailuk Atoll which Kotzebue named Krusenstern after his former commander, and to Likiep, which he named Count Heyden after a Russian admiral. Turning north, the Russians passed Utirik and Taka, which they had seen the previous year, and then departed for the Aleutians.

Kotzebue and his friends made a really excellent report, hydrographic, botanical and ethnological, of the Radak Chain of the Marshalls. Choris painted with great artistry the remarkable outrigger canoes of the Micronesians with their pandanus-mat sails, and described their manners and customs accurately. The Marshall Islands in their day, as now, depended on the pandanus or screw-pine (*Pandanus odoratissimus*) for their principal food, rather than (as the Gilbertese did) on the coconut and taro root, which did not flourish in the poor, thin soil of the Marshalls. Choris even illustrates the clam-bake method by which the natives made Jennegung, a sweet conserve of the pandanus fruit. The nuts are heated for two days in an oven composed of hot stones, covered with earth. The men then rub and scrape them with knives or a coral stone, depositing the viscous yellow syrup on a frame, where it dries into leatherish flat cakes.

[34] He reports that the native name of it was *Kawen*. This was probably their name for the largest islet; at least it is now. Maloelap means 'extended lagoon.'

[35] From Chamisso's spelling *Aour*, evidently pronounced as two syllables.

These are pressed into rolls a foot thick and three feet long, covered with pandanus leaves, and make a highly concentrated form of food.[36]

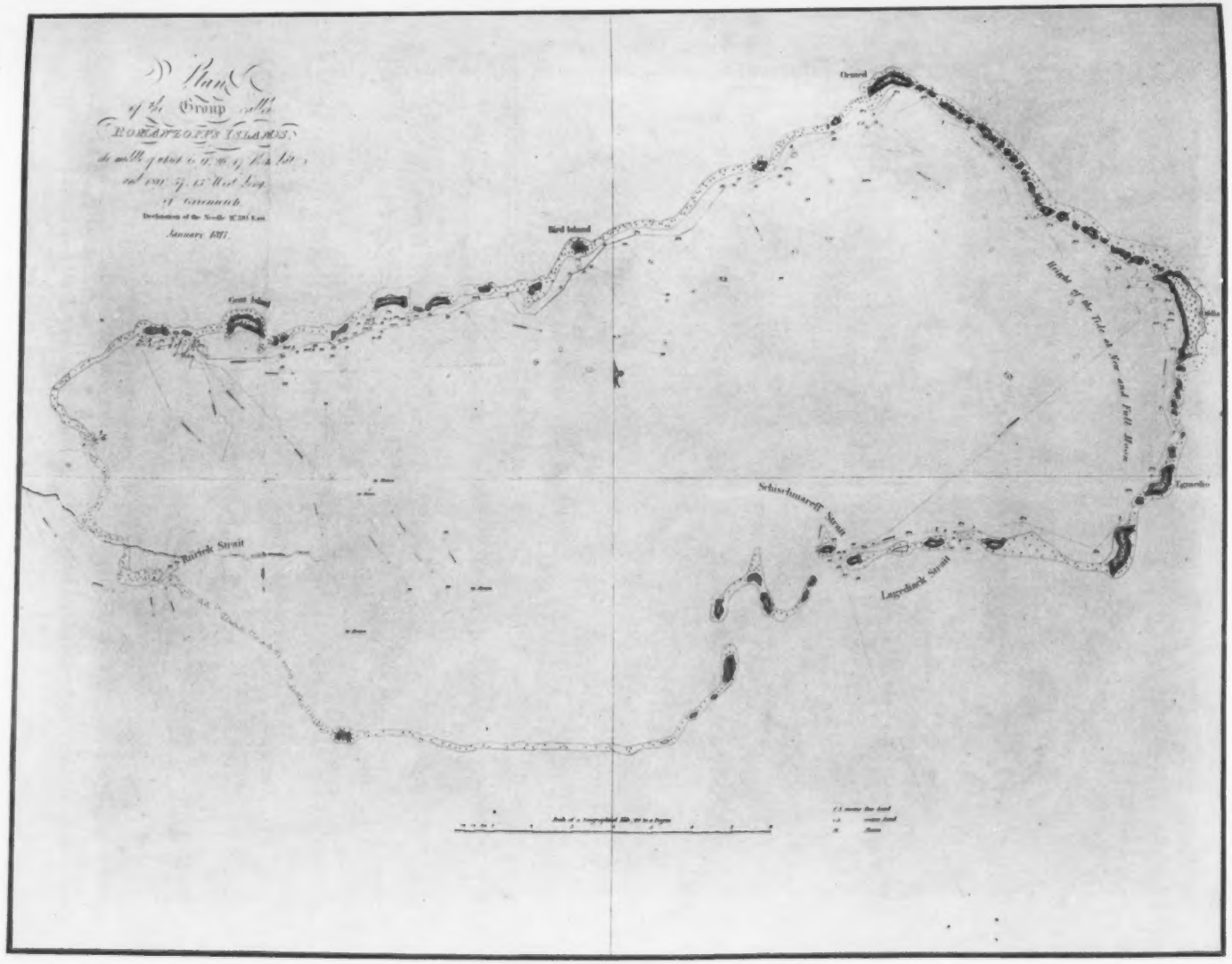
A good deal of fuss was made in Europe over the voyage of the *Rurik*,[37] and rightly so; for Kotzebue had made known the people and scenery of the Marshalls, the Aleutians and the coast of Alaska, just as Captain Cook had opened up the Hawaiians, the Society Islands, and other groups. Kotzebue's narrative was promptly translated into several languages. Chamisso added to his fame by an account of the *Romanzoffischen Entdeckungs-Expedition;* and Choris was persuaded to have his charming paintings lithographed. There is a delicious touch of the romantic age in everything these young men wrote and painted; they had found Rousseau's noble savage, living according to nature on the fruits of the earth and the sea; the men were brave but hospitable, the women were fair and kind, and the unsophisticated art of their shell ornaments and their canoes put the complicated artistry of Europe to shame. Kotzebue and his shipmates were true contemporaries of Lord Byron.

Shortly after Kotzebue's voyage was published in 1821, Russia declared that the southern boundary of Alaska extended to latitude 51° N. It looked as if she intended to become the greater power in the Pacific. And as earnest of this intention, Kotzebue was sent around the world again in 1823, in the sloop *Predpryatic*. Once more he sailed through the Marshall Islands, and this voyage yielded two new names. In 1825 Bikini Atoll at the north end of the Ralik Chain was named Escholtz, from the Baltic surgeon of the *Rurik*, who perhaps shipped on this voyage too; and the nearby Rongelap, together with Ailinginae ('atoll in the current') was named Rimsky-Korsakov Island after the captain of the *Predpryatic*. This Rimsky-Korsakov subsequently became a vice admiral in the Russian Navy. He was of the same family as the famous Russian musician Nicolai Andreievitch Rimsky-Korsakov, who started his career in the Russian Navy. The future composer of *Schéhérazade* and *Le Coq d'Or* was an officer in the Russian fleet that demonstrated off the Atlantic coast of the United States in 1863, to counteract the unfriendly attitude of Great Britain and France.

While Kotzebue was at sea the Emperor Alexander, although somewhat annoyed by the Monroe Doctrine, decided not to crowd the United States on the Northwest Coast of America. In 1824 the treaty was signed

[36] Illustrated in Choris, *Vues et paysages* (1826), plate 16; process described in *Food and Water Supply in the Marshalls*, mimeographed book compiled by the Cross-Cultural Survey, Institute of Human Relations, Yale University, 1943.

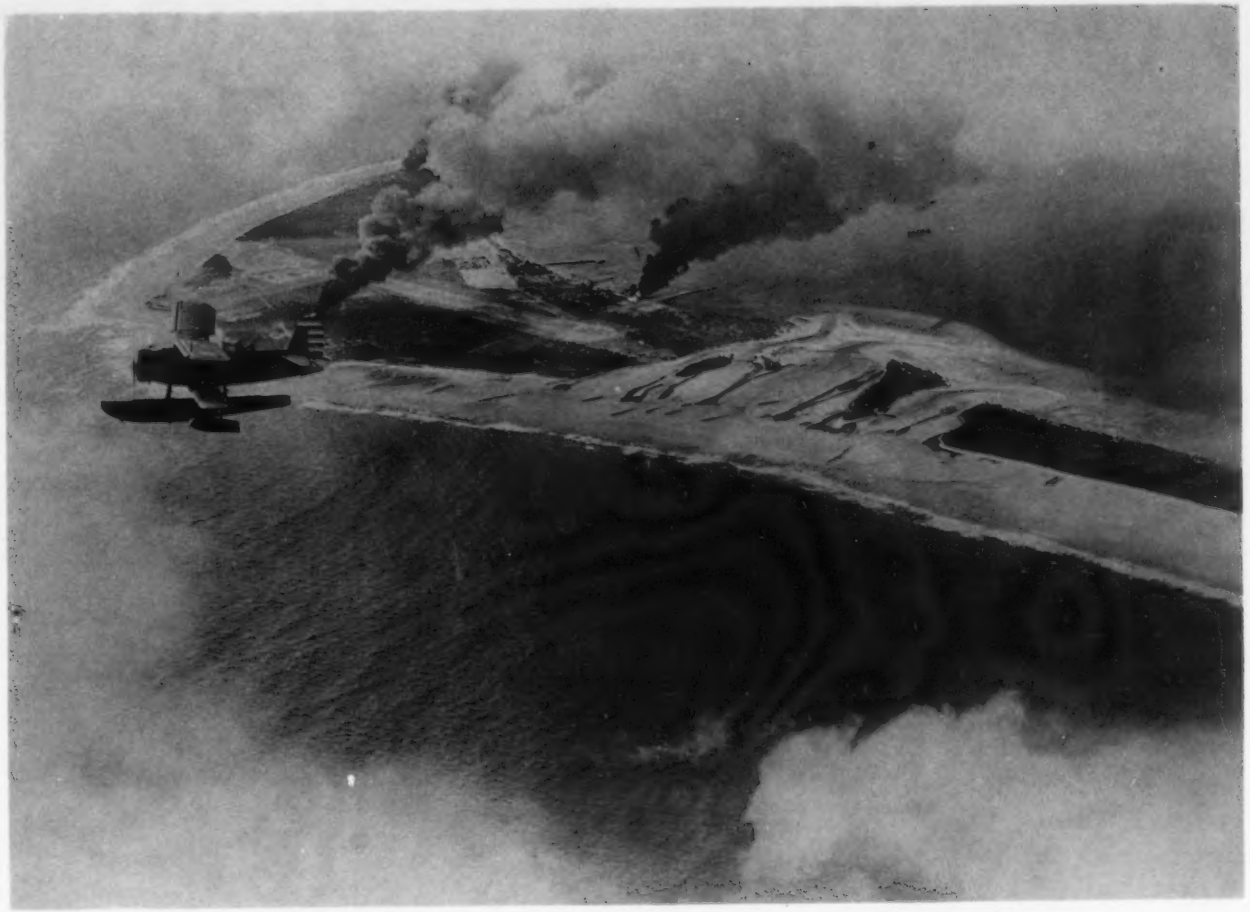
[37] The W.P.A. Central Pacific Islands project dug up numerous references to the voyage in Boston and Salem newspapers of the time.



Kotzebue's Chart of Wotje Atoll

Reproduced from the copy of his Voyage of Discovery in the South Seas and Bering's Straits, *1821, in the Harvard College Library*

PLATE 21



Otdia Island, Wotje Atoll, on 1 February 1942, after attack by U. S. Pacific Fleet

Official U. S. Navy Photograph

in which Russia renounced all her claims north of 'fifty-four forty.' Yet Russian voyages of discovery and exploration continued in the Pacific. The name of Vitiaz Strait between New Guinea and New Britain, commemorates the Russian corvette *Vitiaz*, which sailed through it.[38] Ivan von Schanz, a thirty-two-year-old Finlander in the Russian Navy, commanding the army transport ship *America*, sailed through the Marshalls on a voyage to Kamchatka in 1835, discovered and left his name on Wotho ('reef passage') Atoll.[39]

VI. *Lieutenant Charles Wilkes, U.S.N.*[40]

John Quincy Adams, the unappreciated expansionist of our early republican era, followed events in the Pacific with keen interest and intelligent foresight. During his presidential administration he proposed that the United States fit out an exploring expedition, in order, as it were, to be in the same ring with the Russians, French and British. But for President Adams to propose something was enough for Congress to turn it down; and the exploring expedition had to wait another ten years to get under way.

In 1836, Congress took time out from fighting President Jackson to authorize the 'United States Exploring Expedition in the Southern Seas ... to Extend the Bounds of Science and to Promote Knowledge.' Charles Wilkes, a forty-year-old lieutenant of the United States Navy, who had been head of the Hydrographic Office,[41] accepted the command after three captains and two commodores had declined to serve. About two years were required to organize the expedition and to round up instruments, naturalists, and other scientists to give it a scientific complexion. Finally on 18 August 1838, the United States Exploring Expedition consisting of the sloops-of-war U.S.S. *Vincennes* (780 tons) and *Peacock* (650 tons), the man o' war brig *Porpoise* (230 tons), store-ship *Relief* and two New York pilot boats of about 100 tons, *Sea Gull* and *Flying-Fish* carrying a total complement of eighty-three officers and three hundred and forty-two enlisted men, sailed from Hampton Roads.

[38] A book by Makarov, *La Corvette Vitiaz et l'Océan Pacifique* is mentioned in Monasterev and Terestchenko, p. 153, but I have not found it. In Krusenstern's Atlas, Kwajalein Atoll is called 'Isle du Prince Menchikoff, 1828.' Perhaps this was named on the voyage of the *Vitiaz*.

[39] I cannot find anything definite about this voyage. A naval officer named Khramchenko or Chramtschenko is usually mentioned in connection with Schanz. There was a quartermaster of that name on the *Rurik* in 1815-1818.

[40] Wilkes' account of the Ellice, Gilbert and Marshall Islands is to be found in *Narrative of the United States Exploring Expedition*, vol. V of the 1845 edition, and also in *Voyage Round the World, Embracing the Principal Events of the U. S. Exploring Expedition*, 1849. There are a series of interesting papers on various aspects of the Expedition in *Proceedings of the American Philosophical Society*, LXXXII (1940), 519-800.

[41] At that time called Depot of Charts and Instruments. It was the ancestor of the Naval Observatory as well.

Official U.S. Navy Photograph

After very extensive explorations in Antarctica, the South Pacific and the west coast of the United States and California, and sending the *Vincennes* and *Porpoise* off on another mission, Commodore[42] Wilkes in *Peacock,* accompanied by *Flying-Fish,* sailed from Oahu on 2 December 1840. Sailing through the Phoenix Islands to the Union Group, he discovered Fakaofu and named it Bowditch Island after the famous navigator of Salem. After a short call at Samoa, which he had explored earlier in the voyage, and using the Arrowsmith chart which we have here reproduced, he laid a course for the Ellice Islands. His first call, on 14 March 1841, was at Funafuti, whose inhabitants, when they came aboard, had an odd habit of standing on one leg with the sole of the other foot pressed against the inside of the thigh.[43] Wilkes missed none of the Ellice Islands, and very possibly discovered one or two of them such as Nanomaua.

Continuing in a northerly direction, the *Peacock* and *Flying-Fish* reached the Gilbert Islands, which Wilkes called the 'Tarawan or Kingsmill Group.' His first stop was at Tabiteuea, which he called Drummond Island, the name given by Captain Bishop in 1799. Wilkes describes at great length the manners, customs and artifacts of the natives, and expressed his admiration for the women—'the prettiest that had yet been seen in the South Sea Islands; slender and gracefully formed, . . . and they appeared by no means unconscious of their charms.' Nor were their fathers or brothers, who brought them out and aboard, offering their services in return for trading truck, and driving a hard bargain for the best favored.[44] The men, however, were 'familiar and rude,' and great thieves of tobacco, for which they had a violent passion, even picking the bluejackets' pockets in search of it, and not only chewing but swallowing whatever plug or twist they managed to lay hands on. They were fighters, too, with clubs and ten-foot spears barbed with sharks' teeth and the tail of the poisonous stingray. To protect themselves from these lethal weapons, the Gilbertese had contrived an extraordinary coconut-husk armor, which Wilkes described as follows:

> They had invented a kind of armour, which was almost an effectual defence against their weapons, and accounted at once for their arms and legs being the only parts where scars were seen. This consisted of a sort of cuirass, covering the body as far down as the hips, and rising above the back of the head three or four inches. This, when taken off and set upon the deck, somewhat resembled a high-backed chair. It was made of plaited cocoanut-husk fibres, woven into as solid and

[42] So called by courtesy, as he commanded the expedition.

[43] Wilkes' sketch of a native in this 'singular attitude,' in *Narrative* (1845), V, 39, appears to have inspired 'The Bishop of Rum-ti-foo,' in *The Bab Ballads.* (Plate 24.)

[44] *Narrative,* V, 52, 61.

compact a mass as if it had been made of board half an inch thick, and was as stiff as a coat of mail. For the legs and arms, they have also a covering of netted sennit of the same material, which they put on. That for the legs resembles a pair of overhauls, such as sailmakers use, with straps over the shoulders. The covering for the arms is drawn on in like manner. The appearance of the body was as if it were clothed in pantaloons and jacket of a deep brown colour. This they must find a very inconvenient covering for their hot climate. However singular the body-dress is, that of the head is still more so: it consists of the skin of the porcupine-fish, cut open at the head, and stretched sufficiently large to admit the head of a man. It is perfectly round with the tail sticking upwards, and the two fins acting as a covering and guard for the ears: its colour is perfectly white, and by its toughness and spines affords protection against the native weapons.[45]

Before the end of Wilkes' visit a brawl with the natives occurred, and able seaman John Anderson was reported missing. It was ascertained that he had been carried off to a village on the same atoll, called Utiroa. An expedition of seven armed ships' boats was accordingly sent there to demand Anderson alive, or leave the Utiroans dead. On approaching the beach about five hundred cuirassed warriors were observed, brandishing their long spears and yelling. Their appearance might well have seemed alarming, but to our bluejackets it 'was yet quite ludicrous.' A proffer of tobacco as a ransom for Anderson having failed to make an impression, Mr. Peale, one of the scientists, discharged a rocket, which caused only a momentary confusion. This was followed by a volley of small arms, and the natives scattered, carrying off their dead and wounded. The boat party then landed, set fire to the village, and, not finding Anderson, concluded that he had been murdered. As indicating the lack of unity among these islanders, a party arrived from another village as the bluejackets were getting ready to embark, expressed great glee at the destruction of Utiroa, and proceeded to rummage the ruins in search of plunder.

The *Peacock* and *Flying-Fish* sailed leisurely northward, calling at Aranuka, Kuria and Apemama, heaving-to in order to talk with natives who came out in their canoes with girls to trade. This custom, which none of the earlier discoverers like Gilbert and Kotzebue mentioned, Wilkes thought to be an innovation due to the visits of whaling ships in recent years, and to the natives' discovery of what whalers wanted. And, sure enough, at Kuria they met an Irish beachcomber named John Kirby who had deserted a whaling ship three years before, and was living with a chief's daughter. He sought passage with the Expedition, was taken aboard, and proved to be a useful interpreter, as well as a source of in-

[45] *Narrative*, V, 47-48. One of these suits of armor and helmets, in the Peabody Museum of Salem, is here illustrated (Plate 24). It was assembled at the Museum in 1867 out of sections brought home by various Salem ships.

formation. Kuria, like all the Gilbert Islands was thickly inhabited; Kirby estimated the population at four to five thousand.

Mr. Wilkes' next call was at 'Tarawa or Knox Island' which he describes as follows:

> This island is partially wooded, having several groves of cocoa-nut trees on it, and a dense undergrowth. Several towns were seen on it, and it appeared to be thickly inhabited. It affords no supplies for vessels. Three canoes came off to the ship, two of which kept at a respectful distance, while the third approached with great caution. Some few pieces of iron hoops enticed the natives on board, but they brought nothing for trade, except half a dozen cocoa-nuts. They stated that they had never seen a vessel before. This may be true, but appeared somewhat incredible, when they are so near other islands which have had constant intercourse with shipping. They appeared entirely ignorant of the use of tobacco, which it will be recollected the other natives coveted so much; and what seemed to confirm the belief in the truth of their assertion of the visits of ships, was the absence of females in the canoes, which had been with the natives of the other islands so prominent an article of barter.
>
> They seemed delighted with the pieces of old iron, and regarded junk-bottles with admiration. They are entirely the same in appearance, and in character and customs, with the rest; they go naked, and speak the same dialect.
>
> Tarawa lies in lat. 1° 29′ N, long. 173° 05′ E. and is of coral formation.[46]

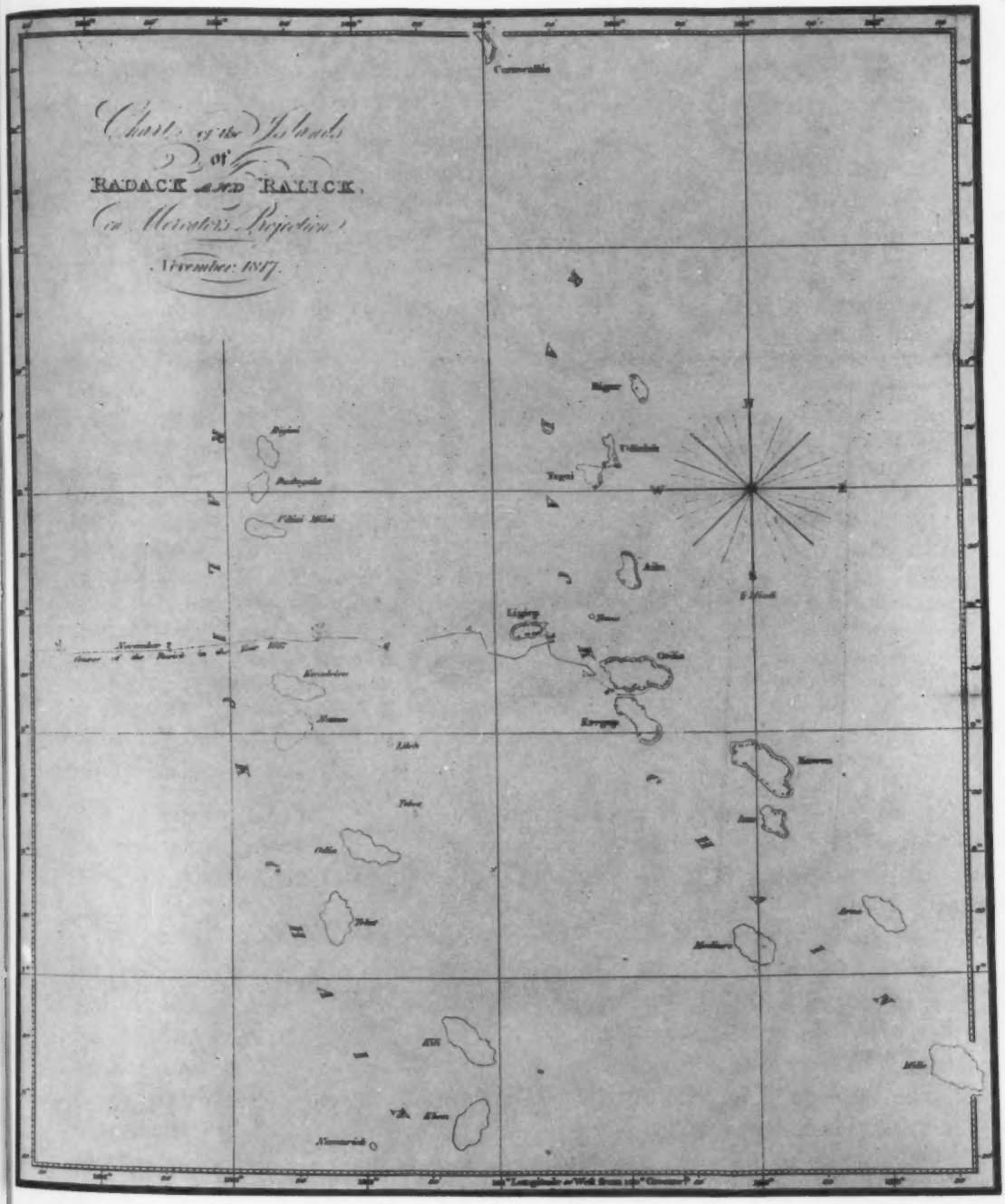
A careful survey was made of Apaiang, which Wilkes calls by Gilbert's name Charlotte Island, and where they viewed a sacred stone dressed with coconut leaves.[47] When surveying the lagoon the *Flying-Fish* grounded, at which the natives of Apaiang became menacing. Captain Hudson of the *Peacock* hove-to outside, in case they needed help, but drifted twelve miles over to Tarawa that night, and so was completely beyond reach when at break of day the natives got ready to attack the tender. Fortunately the flood tide floated her off at that critical moment, and a single rifle shot was sufficient to keep the canoes at a safe distance.

Marakei, which Wilkes calls Matthew's Island, the name which Gilbert perhaps gave to another atoll, was next surveyed; and on 27 May the *Peacock* left to look for Makin, which Wilkes calls Pitt's Island. It will be observed that he took most of his names from the Arrowsmith Chart. 'There are two islands known under this name,' he writes: 'the largest is called by the natives Taritari, and the smallest, Makin. . . . The latitude of the southern point of Taritari is 3° 08′ N. long. 172° 48′ E.'[48] These are the atolls we call Makin and Little Makin. About twenty canoes came off

[46] *Narrative*, V, 68-69.

[47] Illustrated ibid., 110.

[48] *Narrative*, V, 71. Makin has been applied to the larger atoll very recently. Even in some books and chests of this century it is called Taritari or Bataritari.



Kotzebue's Chart of the Marshall Islands

Reproduced from the copy of his Voyage of Discovery in the South Seas and Bering's Straits, *1821, in the Harvard College Library*

Native of Ellice Islands, as illustrated in the report of the Wilkes Expedition

Model of Gilbert Islands Warrior in Coconut Fibre Armor, in Peabody Museum of Salem

Native of Makin Island, as illustrated in the report of the Wilkes Expedition

to greet the *Peacock,* and in one of them was a Scots beachcomber named Robert Wood. He had landed there from a Sydney whaler seven years before, and in all that time had not seen another white man. Wood was so excited as to be quite unintelligible at first; later he told Wilkes a great deal about Makin. The natives had used him kindly; indeed 'almost deified him' until they knew him better. The men of Makin were very different from those at Apaiang, even in appearance. Wilkes writes:

> In the short intercourse the *Peacock* had with the natives of this island, a great difference was perceptible between them and those of the other islands, as well in respect to their appearance, as in character. Their features were regular and by some thought handsome; they had fine teeth, with glossy black hair, flowing in ringlets about their heads; they were also of a lighter colour than the rest of the natives with whom they are grouped; their figures are, for the most part, rotund, and they seem to have an abundance of food to become fat upon. In walking, they appeared like a moving mass of jelly; every laugh set not only their sides in motion, but their whole frame and flesh. On being asked how these people became so fat, Wood replied, they had plenty of food and 'toddy' to fatten upon; this last is a syrup, called by the natives 'karaca,' made from the sap of the young cocoa-nut trees: of this they drink immoderately. They wear mustaches and whiskers, which are highly prized and carefully nursed among them. They had a good-humoured cast of countenance, and seemed peaceable and full of kindness. No scars were seen on their bodies, neither had they any warlike instruments with them. All the little casualties which so often affected the harmony of the natives before, here produced no sort of disturbance; and each was inclined to render the other assistance in repairing the accidents.[49]

The men were tattooed all over; they neither begged nor stole; their canoes were larger and better built than elsewhere in the Gilberts. Tekere, the chief, came out to the *Peacock* but was too fat to climb the Jacob's ladder.

According to their own traditions, which the two beachcombers had picked up, the Gilbert Islanders were descended from two different groups who had arrived by canoe not very long—say one hundred and fifty years—before, one from the southwestward and the other from the southeastward. Wilkes did not encounter the now familiar yarn of their being descended from a Spanish sailor and the several daughters of a native chief. Each atoll at the time of Wilkes' visit was completely independent of every other, except that a 'king' named Tetalau ruled Apemama, Aranuka and Kuria.[50] There was a marked absence of the tabu system which played such a great part in Polynesian life; but if that

[49] *Narrative,* V, 72-73. Wilkes has an entire chapter on "Manners and Customs of the Kingsmill Islanders," largely extracted from the two beachcombers. He remarks that the men looked more like Malays than Polynesians; Robert Louis Stevenson made the same observation forty years later.

[50] *Narrative,* V, 84.

observation was correct, tabus were later introduced, as Stevenson experienced. Cannibalism was practised only occasionally, and more out of curiosity than from hunger or vindicativeness.

At Makin there was a curious sex situation. The king had twenty to fifty wives; the bigger chiefs also were polygamous; but the supply of women was so limited that many men of the common people had to lead a life of celibacy. There were no prostitutes, and fooling around spare wives was not tolerated; Tekere had caused some of his younger and more attractive wenches to be sewed up in mats so that enterprising bachelors could not get at them when he went away on a canoe trip. One unfortunate young man tried to stow away in the *Peacock* because, as he explained, he was too poor to rate a wife on Makin, and wished to try his luck on another island.

With the two beachcombers aboard, paying their passage with information, *Peacock* and *Flying-Fish* squared away for the Marshall Islands. They followed the track of the *Charlotte* as given on Arrowsmith's chart, past Mille and between Majuro and Arno. Steering up the slot between the Radak and Ralik Chains, they made Rongerik, which Wilkes calls by the old Spanish name Pescadores, on 5 May, and Rongelap, which he identified as Kotzebue's Rimsky-Korsakov Island, two days later. Thence they returned to Oahu.

At the end of the year 1841, Lieutenant Wilkes passed north of the Marshall Islands in U.S.S. *Vincennes,* en route from Honolulu to Manila.[51] On 19 December he raised Wake Island—one of the few of islands visited by him over which the United States ever claimed sovereignty—and then proceeded to the Ladrones and Luzon. Lieutenant Knox, in the meantime, took the *Flying-Fish* down through the Marshalls, which Wilkes always refers to as the Mulgrave Islands. The tender passed Majuro on 16 December 1841, sighted Jaluit and one other atoll, and then proceeded to the Philippines. Before returning home, Wilkes and his officers had surveyed two hundred and eighty islands as well as sixteen hundred miles of Antarctica, and eight hundred miles of our Northwest Coast.

Commodore Wilkes' *Narrative* is much the most thorough description of the Gilbert Islands that had yet been written; it has been a fertile source of superficial writing about the Pacific by 'globetrotters' and library geographers during the last century. He made careful surveys of several of the atolls. His charts, greatly superior to any that had previously been

[51] *Narrative,* V, chapter vii. Wilkes complains that the 'morals' of Honolulu had 'declined' since his previous visit; 'the number of grog-shops had apparently increased, and the sailors' dancing halls, with their music, were allowed more license.'

done in the Pacific, were still being used over a century later, when the Central Pacific Force of the United States Pacific Fleet, Admiral R. A. Spruance, U.S.N. commanding, ousted the Japanese from Makin, Tarawa and Apemama. It is unfortunate that Wilkes' great services as an explorer and navigator should have been eclipsed in popular estimation by his seizure of Messrs. Mason and Slidell in 1861, and that his record in the Navy was injured by a long and angry controversy with Gideon Welles, President Lincoln's Secretary of the Navy.

VII. *Missionaries and Blackbirders*

A new era in the Gilberts and Marshalls opened with the arrival of the 'Boston Missionaries' in the 1850's. Their efforts were an offshoot from the Congregational mission and church which Bostonians had established in Honolulu as early as 1820. The publications of the United States Exploring Expedition called attention to the Gilberts and Marshalls; and as the Hawaiian Islands by that time were pretty well covered, it seemed proper to plant a 'Vineyard of the Lord' somewhat further afield.

It took courage to plant missions on those islands, at that era. The people, as we have seen, were bellicose and liable to murder the crew of any vessel that offered plunder. They had been given plenty of provocation by visiting whalers and rascally traders.

The first Boston mission was not established in the Gilberts or Marshalls, but in the easternmost Caroline Island of Kusaie, or Strong Island as it had been named in 1804. The Reverend and Mrs. B. G. Snow with a native Hawaiian named Kekala who had been educated in Boston, landed there in the schooner *Caroline* in 1852. They first touched at Makin, but decided the going there was too tough and went on to Kusaie, where the native ruler, 'King George' welcomed them. He died two years later and was succeeded by a chief whose only interests were liquor and women; but these hastened him to a premature death in 1856, and his successor tolerated the missionaries.

The Gilbert Islands were converted and in a sense civilized largely owing to the efforts of the Reverend and Mrs. Hiram Bingham. As a twenty-five-year-old Yale graduate, Bingham sailed from Boston in 1856 in the schooner *Morning Star,* first of a series of missionary vessels supported by the American Board of Foreign Missions.[52] After considerable stay at Honolulu they established a mission station the following fall on Apaiang, where the way had been prepared by the Reverend and Mrs. Pierson the year before, and the 'king,' named Teutebau, received them

[52] Honolulu *Friend,* October 1861 (file at Peabody Museum); *Story of the* Morning Stars, 1897 ed.

cordially. Native Hawaiian missionaries were sent to Tarawa; and the Reverend E. T. Doane, presumably from the Cape Cod family that has produced divines of divers sects, visited Mille.

These early missionaries and their wives certainly had courage. Armed only with the Bible and a faith in human nature, they entered islands notorious for cutting out trading schooners and murdering all hands. They preached the gospel pure and hot; no trimming for the native taste, no compromise. They lived for years on native food and such salt horse and flour as they could import at long intervals. They built boats, and sailed in them or in native canoes to other islands, never knowing when they might be murdered.[53] Mr. and Mrs. Bingham stayed eight years at Apaiang, printed some chapters translated from the New Testament on a little hand press there in 1864, and left a Hawaiian missionary in charge when they departed. After a visit to the United States in 1865, Mr. Bingham came out again the following year in command of the second *Morning Star,* made a tour of Micronesia, and then resided at Honolulu to work on his Gilbertese Bible. For, like old Ulfilas or John Eliot of New England, Bingham undertook the colossal task of reducing a barbarous spoken language to writing, and translating the Bible into it from the original Greek and Hebrew. He completed the New Testament in 1873, with the aid of a Gilbertese convert named Moses Kaure, and returned to Apaiang to distribute copies. Health forced him to leave there in 1875, and he settled down at Honolulu, completing his translation of the Old Testament in 1890, and a Gilbertese dictionary just before his death in 1908.

The missionaries arrived none too soon, for about the time of our Civil War these islands became the scene of 'blackbirding,' a peculiarly cruel and disgusting sort of slavery. Sugar plantations in Queensland, mines in Mexico, the guano islands off Peru, and other exploitations around the South Pacific, were crying for cheap labor. So trading schooners were fitted out, and native boys were either lured aboard by specious promises or crudely kidnapped, to be put to unaccustomed work in a foreign country, from which few ever returned. Tens of thousands of Polynesians, Micronesians and Melanesians were treated thus. This infamous traffic was at its height from about 1865 to 1890, when 'Bully' Hayes, who hailed from Cleveland, Ohio, was king of the blackbirders. His favorite resort, after selling a cargo of blackbirds, was the harbor of Lele in Kusaie. There,

[53] The Honolulu *Friend* for June 1856, February 1859, September 1861, and subsequent months, has many pages on the adventures of Doane, Pierson, and Bingham in the Gilberts and Marshalls. There is no biography of Bingham, other than Robert W. Logan, *The Work of God in Micronesia* (1890) and O. H. Gulick, *Pilgrims of Hawaii.* He was the father of Senator Hiram Bingham.

with a band of tough Gilbertese and Ocean Islanders who were his boon companions, he held wild orgies of drinking and fighting that drove the peaceable natives into the woods. 'Americans have had a good deal to do with Kusaie,' observes Willard Price in his *Pacific Adventure*. 'Americans damned it; Americans redeemed it.' Unfortunately, Americans must now redeem it again.

The first redeeming was done by the missionaries. Whether or not they were driven out by Bully Hayes and his merry men, I have not ascertained; but after a British warship deported him, they were there. Everyone who has visited the island has testified to their devotion to the people, and their success in transforming one of the hell-holes of the Pacific into a happy, healthy and law-abiding community. Even the Japanese government, when it took over the Marshall and Caroline Islands in 1915, realized what a social asset the 'Boston missionaries' were, and contributed to their support.

No doubt equally inspiring stories could be told about the Anglican and Catholic missions in the Gilbert and Marshall Islands, if one knew them. Two French fathers of the Sacred Heart Congregation stayed on Makin Atoll throughout the Japanese occupation of 1942-1943, ministering as best they could to their converts, and were there to welcome us last November. But it must be admitted that the Boston Puritans were the pioneers. They came when conditions were most dangerous and discouraging; they had nothing but faith and character to protect them. The American Board supported missions at Ebon, Apaiang, Makin, Jaluit, Kusaie and Ocean Island, and in several of the Marshalls, right down to our own day; five of their missionaries, all but one elderly women, were evacuated from these islands between 1939 and 1941 after long years of labor.[54]

VIII. *Robert Louis Stevenson*[55]

The last episode of interest in the history of the Gilbert Islands before the establishment of the British protectorate in 1894, was the visit of Robert Louis Stevenson in 1889. At the age of thirty-nine he was seeking

[54] Miss Jane Baldwin, now of 332 Lawn Ridge Road, Orange, New Jersey, was at Truk 1898-1910, and Kusaie 1911-1941. Miss Jessie Hoppin now of 1214 West Front Street, Ashland, Wisconsin, was at Kusaie 1890-1916, and Jaluit 1914-1939. Miss Eleanor Wilson now of 113 Oakdale Avenue, Catonsville, Maryland, was at Kusaie 1936-1941. The Reverend and Mrs. C. F. McCall, now of Ashland, Oregon, were at Kusaie 1928-1940. Information from American Board of Commissioners for Foreign Missions, Boston. The records of these missions are on deposit in the Harvard College Library.

[55] His adventures in the Gilberts are told in *In the South Seas*, which first appeared as a series of articles in the London *Black and White* and New York *Sun* in 1891, and, somewhat abridged, in a volume of that title in his collected *Works*.

adventure, material, and a cure for tuberculosis in the South Seas; and all but the last he found. At Honolulu he chartered the 62-ton schooner *Equator,* loaded her with mouth-organs, five-cent cigars and other trading truck, and embarked with his wife, his stepson Lloyd Osbourne, a man-servant, and a Chinese cook, Ah Fu. Their first call in the Gilberts, on 13 July, was at Butaritari Island, Makin Atoll — the exact place where the United States Navy and Marines made two calls, in 1942 and 1943; and they landed on the lagoon side. Stevenson's description is sharp and accurate:

> The two chief places of our stay, Butaritari and Apemama, lie near the line; the latter within thirty miles. Both enjoy a superb ocean climate, days of blinding sun and bracing wind, nights of a heavenly brightness. Both are somewhat wider than Fakarava, measuring perhaps (at the widest) a quarter of a mile from beach to beach. In both, a coarse kind of *taro* thrives; its culture is a chief business of the natives, and the consequent mounds and ditches make miniature scenery and amuse the eye. In all else they show the customary features of an atoll; the low horizon, the expanse of the lagoon, the sedge-like rim of palm-tops, the sameness and smallness of the land, the hugely superior size and interest of sea and sky. Life on such islands is in many points like life on shipboard. The atoll, like the ship, is soon taken for granted; and the islanders, like the ship's crew, become soon the centre of attention. The isles are populous, independent, seats of kinglets, recently civilized, little visited. In the last decade many changes have crept in; women no longer go unclothed till marriage; the widow no longer sleeps at night and goes abroad by day with the skull of her dead husband; and, fire-arms being introduced, the spear and the shark-tooth sword are sold for curiosities. Ten years ago all these things and practices were to be seen in use; yet ten years more, and the old society will have entirely vanished. We came in a happy moment to see its institutions still erect and (in Apemama) scarce decayed.
>
> Populous and independent — warrens of men, ruled over with some rustic pomp — such was the first and still the recurring impression of these tiny lands. As we stood across the lagoon for the town of Butaritari, a stretch of the low shore was seen to be crowded with the brown roofs of houses; those of the palace and king's summer parlour (which are of corrugated iron) glittered near one end conspicuously bright; the royal colours flew hard by on a tall flag-staff; in front, on an artificial islet, the gaol played the part of a martello. Even upon this first and distant view, the place had scarce the air of what it truly was, a village; rather of that which it was also, a petty metropolis, a city rustic and yet royal.
>
> The lagoon is shoal. The tide being out, we waded for some quarter of a mile in tepid shallows, and stepped ashore at last into a flagrant stagnancy of sun and heat. The lee side of a line island after noon is indeed a breathless place; on the ocean beach the trade will be still blowing also, speeding the canoes; but the screen of bush completely intercepts it from the shore, and sleep and silence and companies of mosquitoes brood upon the town.[56]

[56] *In the South Seas,* Part III, chapter i (Scribner's 1911 ed. of Stevenson's *Works,* XIX, 222-223).

The resident missionary was a Hawaiian named Maka; natives were already provided with firearms, and on the lagoon side of Butaritari, eleven traders sold dry goods and miscellaneous goods in return for copra;[57] two of them, 'The Land We Live In,' and 'Sans Souci,' also sold liquor. The former's barkeeper, an American negro named Williams, also acted as interpreter between R. L. S. and the 'king,' Tebureimoa. Stevenson thus describes the Gilbertese natives:

> The men are of a marked Arabian cast of features, often bearded and mustached, often gaily dressed, some with bracelets and anklets, all stalking hidalgo-like, and accepting salutations with a haughty lip. The hair (with the dandies of either sex) is worn turban-wise in a frizzled bush; and like the daggers of the Japanese, a pointed stick (used for a comb) is thrust gallantly among the curls. The women from this bush of hair look forth enticingly: the race cannot be compared with the Tahitian for female beauty; I doubt even if the average be high; but some of the prettiest girls, and one of the handsomest women I ever saw, were Gilbertines.[58]

Stevenson soon found he had run into a delicate situation. There was a royal tabu on liquor. But the American community, which included one tavern keeper and most of the eleven other white people, finding that copra was coming in slowly when no longer paid for by drinks, had induced the king to remove the tabu on the excuse that they should celebrate the Fourth of July in proper style. The party, honored by the king's presence, was exceedingly merry; and his majesty and subjects had been drinking ever since. The two bars did a roaring business in 'din and perandi' (gin and brandy), but the natives were now running deeply into debt, and beginning to throw coconuts about and be saucy to the whites. Yet the 'Sans Souci' dared not close its bar for fear 'The Land We Live In' would get all the business, and vice-versa; in fact both feared to put up the blinds, lest the natives kill the whites and loot their cellars. Every day the white men begged the king to clap on the tabu; every day he promised to do it tomorrow; but when the morrow came he needed a little more hair of the dog that bit him, and procrastinated. The situation was becoming very serious, for the royal family were knocking off kümmel by the tumbler-full, and would soon be in no state to protect the white men if the natives took a fancy to massacre them. About the only precaution the lords of creation could take was to indulge in target practice at empty bottles, in order to impress the drunken natives that a sober white man was

[57] Some thirty years earlier it had been ascertained that copra (dried coconut meat) was an excellent source of vegetable oils, and traders were busily creating 'sales demand' among the natives in order to induce them to prepare copra.

[58] *Works*, XIX, 240.

the better shot. Finally R. L. S. was elected ambassador. He obtained a treaty between the rival tavern keepers to sell no more liquor; and by not denying a local rumor to the effect that he was a son of Queen Victoria, persuaded the king to reënforce the tabu after twenty days' continuous debauch.

The *Equator* now got under way and sailed the Stevensons to Apaiang. From the lagoon R. L. S. wrote an amusing description of Apaiang's beachcombers for his friend Sidney Colvin:

> The beachcomber is perhaps the most interesting character here; the natives are very different, on the whole, from Polynesians: they are moral, standoffish (for good reasons), and protected by a dark tongue. It is delightful to meet the few Hawaiians (mostly missionaries) that are dotted about, with their Italian *brio* and their ready friendliness. The whites are a strange lot, many of them good, kind, pleasant fellows; others quite the lowest I have ever seen even in the slums of cities. I wish I had time to narrate to you the doings and character of three white murderers (more or less proven) I have met. One, the only undoubted assassin of the lot, quite gained my affection in his big home out of a wreck, with his New Hebrides wife in her savage turban of hair and yet a perfect lady, and his three adorable little girls in Rob Roy Macgregor dresses, dancing to the hand organ, performing circus on the floor with startling effects of nudity, and curling up together on a mat to sleep, three sizes, three attitudes, three Rob Roy dresses, and six little clenched fists: the murderer meanwhile brooding and gloating over his chicks, till your whole heart went out to him; and yet his crime on the face of it was dark: disembowelling, in his own house, an old man of seventy, and him drunk.[59]

R. L. S. did not stay here long because he wished to visit King Tembinoka of Apemama, the last royal tyrant of the Gilberts. *Equator* entered the lagoon on 1 September and the monarch came aboard to survey her trading truck. Stevenson's description of him is a classic:

> A beaked profile like Dante's in the mask, a mane of long black hair, the eye brilliant, imperious, and inquiring: for certain parts, and to one who could have used it, the face was a fortune. His voice matched it well, being shrill, powerful, and uncanny, with a note like a sea-bird's. Where there are no fashions, none to set them, few to follow them if they were set, and none to criticize, he dresses — as Sir Charles Grandison lived —"to his own heart." Now he wears a woman's frock, now a naval uniform; now (and more usually) figures in a masquerade costume of his own design: trousers and a singular jacket with shirt tails, the cut and fit wonderful for island workmanship, the material always handsome, sometimes green velvet, sometimes cardinal red silk. This masquerade becomes him admirably. In the woman's frock he looks ominous and weird beyond belief. I see him now come pacing towards me in the cruel sun, solitary, a figure out of Hoffman.[60]

[59] 22 August 1889, *Letters and Miscellanies of R. L. Stevenson (Works,* Scribner's 1911 ed., XXXIV, 192-193).

[60] *In the South Seas,* Part IV, chapter i *(Works,* XIX, 303).

Tembinoka was 'not only the sole ruler,' but 'the sole merchant of his triple kingdom, Apemama, Arnuka and Kuria.' He monopolized turtles, coconuts and copra; he allowed no trader ashore, but took his subjects' produce and purchased from visiting schooners whatever caught his fancy — music boxes, clocks, umbrellas, rifles, even stoves. The *Equator* sold him a bowl of goldfish, and seventeen boxes of scented soap at two dollars a cake. Of the subjects only his wives were allowed to make purchases of their own. He gave them money for trade tobacco — the rank, black twists still made in Richmond for South Sea trade — and they bought it in case lots; — but the king won it all back from them at cards. The game they played was a modified poker of which the king made the rules, one of them being that he was entitled to deal himself two hands to their one. Naturally he always won.

After a long palaver, Tembinoka graciously permitted the Stevenson party to come ashore and live, while the *Equator* sailed away on trading business. The king had a group of maniaps — native thatched houses — erected for them on the highest spot in Apemama. 'Equator Town' they called it; and there they stayed for months, Stevenson doing a bit of writing, others sketching, shooting birds, and taking photographs with a new hand-camera. Tembinoka became their good friend, and wept when they sailed. R. L. S. has a succinct description of the king and of their life in a letter of October 1889 to Colvin:

> We have been about a month ashore, camping out in a kind of town the king set up for us: on the idea that I was really a 'big chief' in England. He dines with us sometimes, and sends up a cook for a share of our meals when he does not come himself. This sounds like high living! alas, undeceive yourself. Salt junk is the mainstay; a low island, except for cocoanuts, is just the same as a ship at sea: brackish water, no supplies, and very little shelter. The king is a great character — a thorough tyrant, very much a gentleman, a poet, a musician, a historian, or perhaps rather more a genealogist — it is strange to see him lying in his house among a lot of wives (nominal wives) writing the History of Apemama in an account-book; his description of one of his own songs, which he sang to me himself, as 'about sweethearts, and trees, and the sea — and no true, all-the-same lie,' seems about as compendious a definition of lyric poetry as a man could ask. Tembinoka is here the great attraction; all the rest is heat and tedium and villainous dazzle, and yet more villainous mosquitos. We are like to be here, however, many a long week before we get away, and then whither?[61]

Stevenson was fortunate to arrive at almost the last moment when the native civilization could be observed. When his biographer Graham Balfour called there in 1893, all had changed. Great Britain had annexed the

[61] *Letters*, etc., XXIV, 194-195.

archipelago, at the missionaries' earnest request, to protect the people against exploiters; the beachcombers had been shipped away. Tembinoka was dead; measles had carried off a large part of the population and a boy king acted as puppet ruler for the British magistrate.

Under British rule and missionary guidance the natives gradually recovered their former numbers. By 1937, if the *Pacific Island Year Book* estimate of 26,231 natives, 88 whites, and 21 Chinese is correct, the Gilbert Islands were one of the most thickly populated parts of the South Pacific.

The Marshall Islands were annexed by Germany about 1885, after several German trading firms had built up a copra business there. Spain protested, but in 1899 relinquished all her claims to the Carolines, Marshalls and Ladrones, excepting Guam.

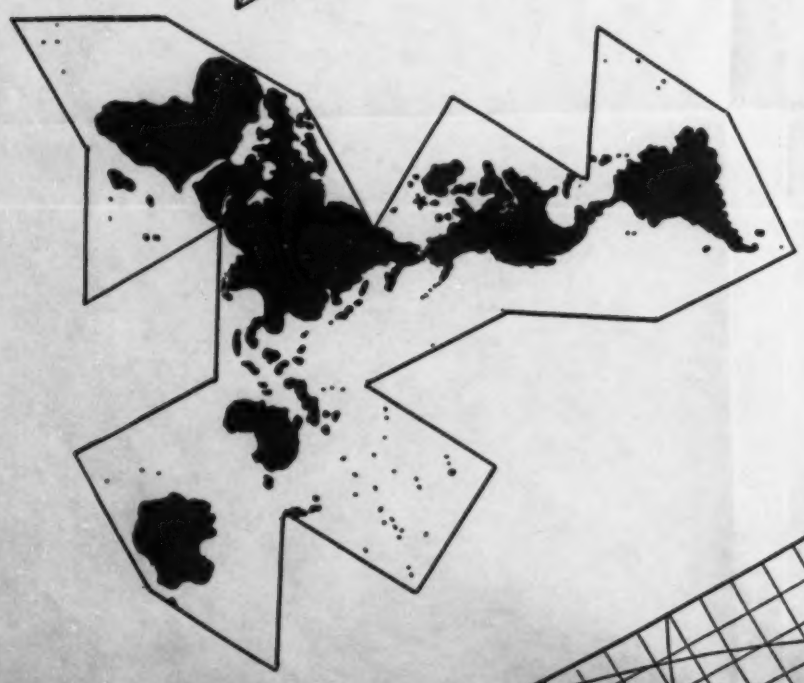
Information about events of the last fifty years on the Marshalls is much more difficult to come by than that on the Gilberts. The Germans developed the copra business and sent in missionaries; but they never had a Captain Wilkes or an R. L. S. to write about the Marshall Islands. Japan easily conquered these then undefended islands in 1914, and obtained a mandate to them after the war. In 1935, when Japan withdrew from the League of Nations, the Marshalls should properly have been returned to the League for remandating; but Japan was determined to keep them for obvious strategic reasons, and annexed them to the Empire.

From that empire they are being wrested by the armed forces of the United States, as I compile these notes of bygone days.

12 INTERWOVEN 180° GORES
LATERAL TRIANGLES AND SQUA

PERCENTAGE OF WORLD POPULATION IN EQUILATERAL TRIANGLES AND SQUARES.

Asia	50
Europe	25
Africa	12
No. America	7
So. America	4
Cen. America	1
All others	
Aleutian	
Pacific	
No. Atlantic	
So. Atlantic	1
So. Pacific	
Indian Ocean	
Australia	
Antarctic	
	100%

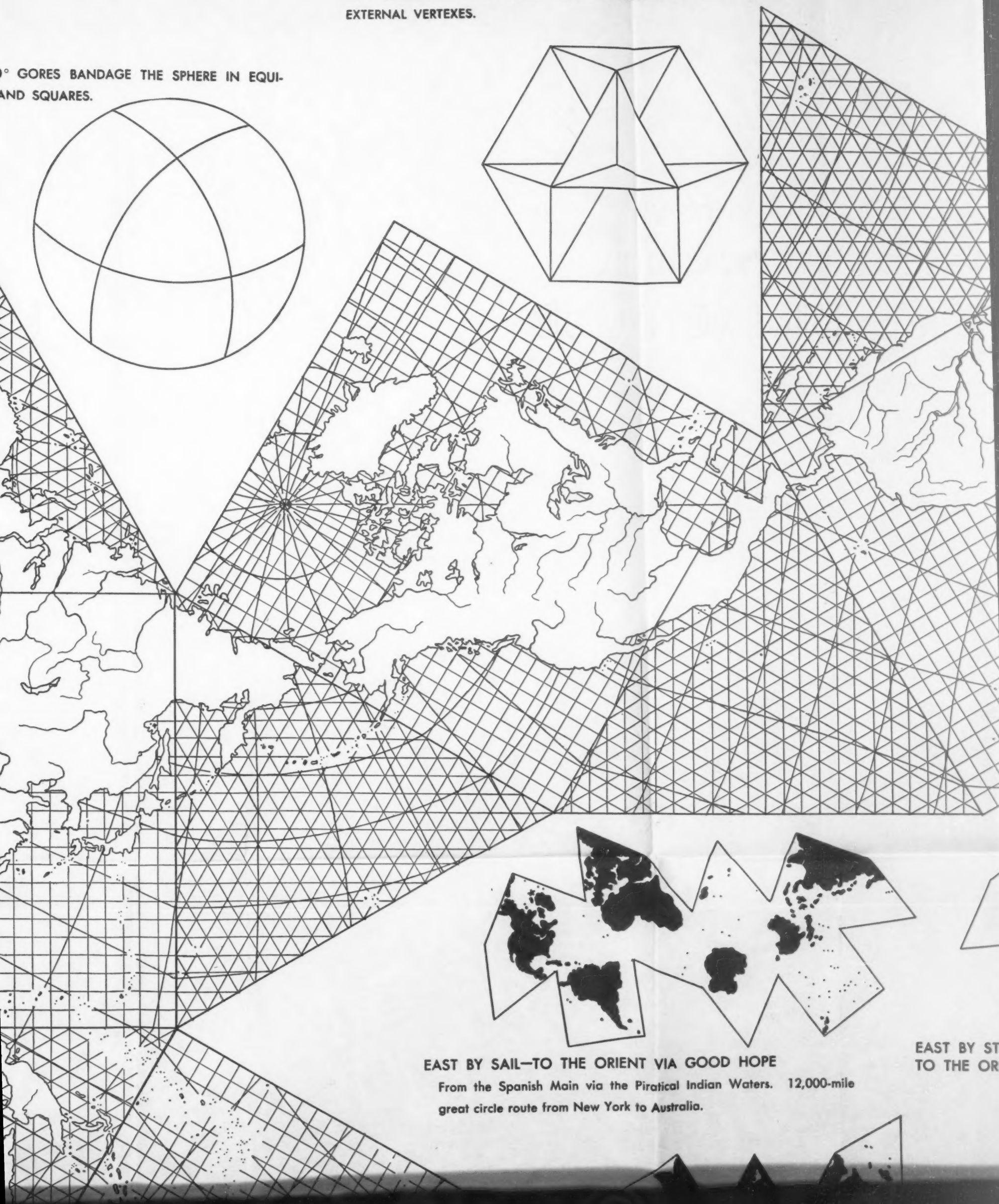


ONE CONTINENT

Bottom of the Aeronautical Ocean

° GORES BANDAGE THE SPHERE IN EQUI-
AND SQUARES.

24 EQUIANGULAR TRIANGLES WITH COMMON INTERNAL AND EXTERNAL VERTEXES.



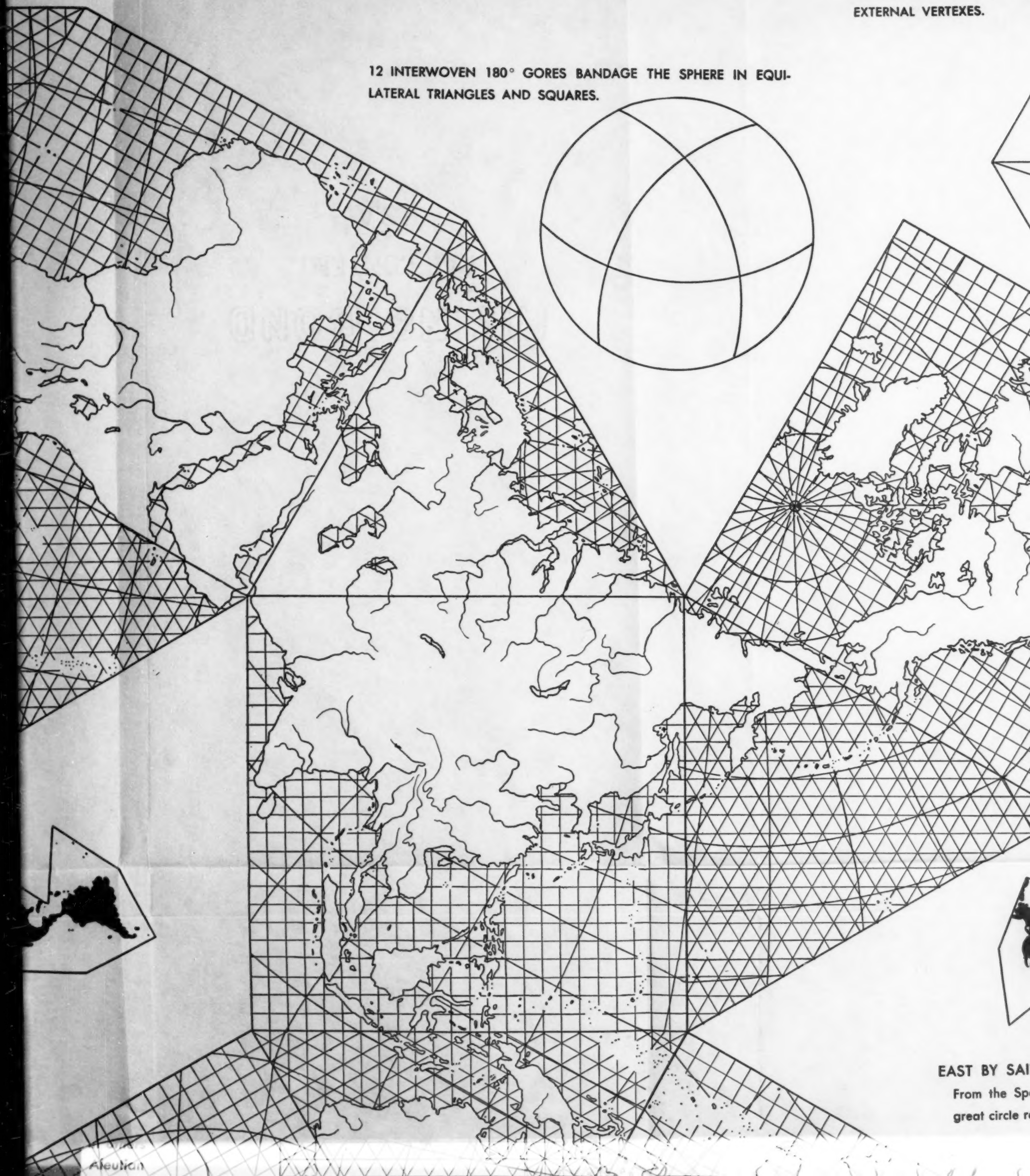
EAST BY SAIL—TO THE ORIENT VIA GOOD HOPE

From the Spanish Main via the Piratical Indian Waters. 12,000-mile great circle route from New York to Australia.

EAST BY STE
TO THE ORIE

24 EQUIANGULAR TRIANGL
EXTERNAL VERTEXES.

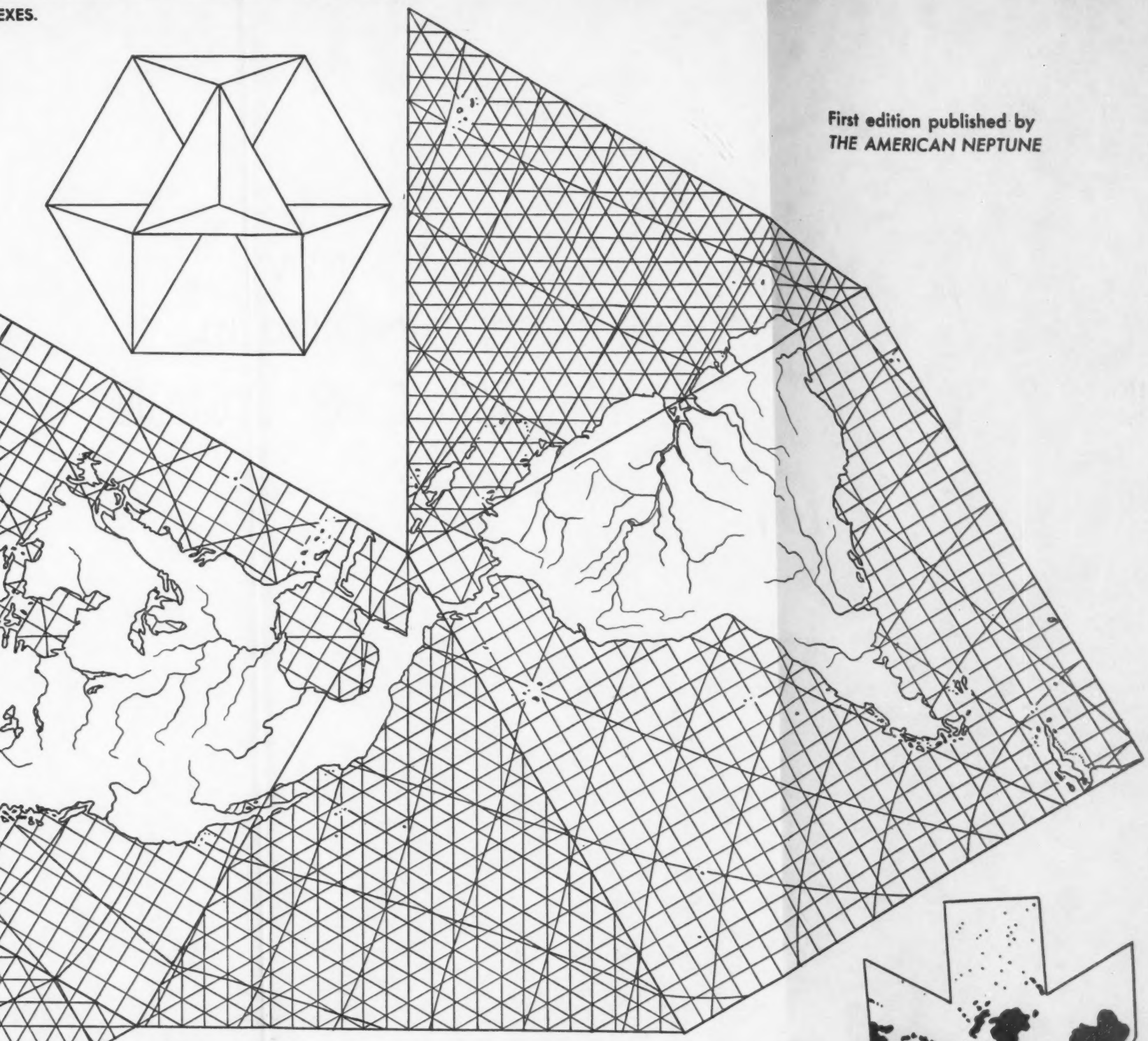
12 INTERWOVEN 180° GORES BANDAGE THE SPHERE IN EQUILATERAL TRIANGLES AND SQUARES.



EAST BY SAI
From the Sp
great circle r

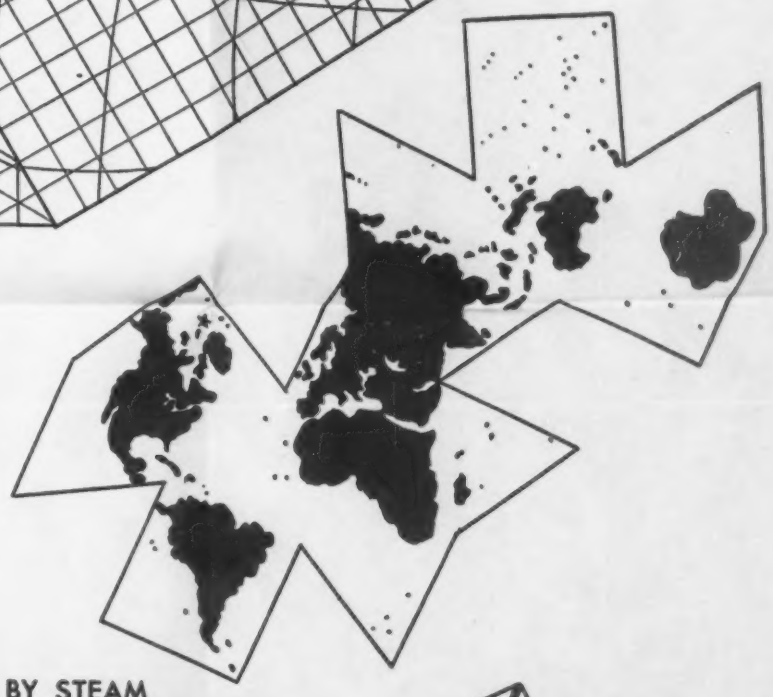
Aleutian

AR TRIANGLES WITH COMMON INTERNAL AND
EXES.



ST BY SAIL—TO THE ORIENT VIA GOOD HOPE

rom the Spanish Main via the Piratical Indian Waters. 12,000-mile
reat circle route from New York to Australia.



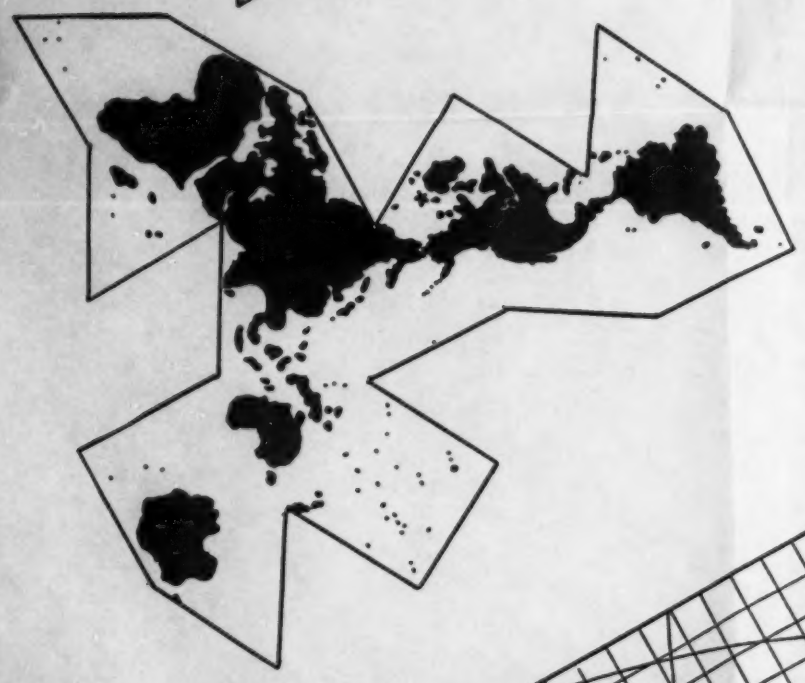
EAST BY STEAM
TO THE ORIENT VIA SUEZ

First edition published by
THE AMERICAN NEPTUNE

Aleutian
Pacific
No. Atlantic
So. Atlantic
So. Pacific
Indian Ocean
Australia
Antarctic

1

100%



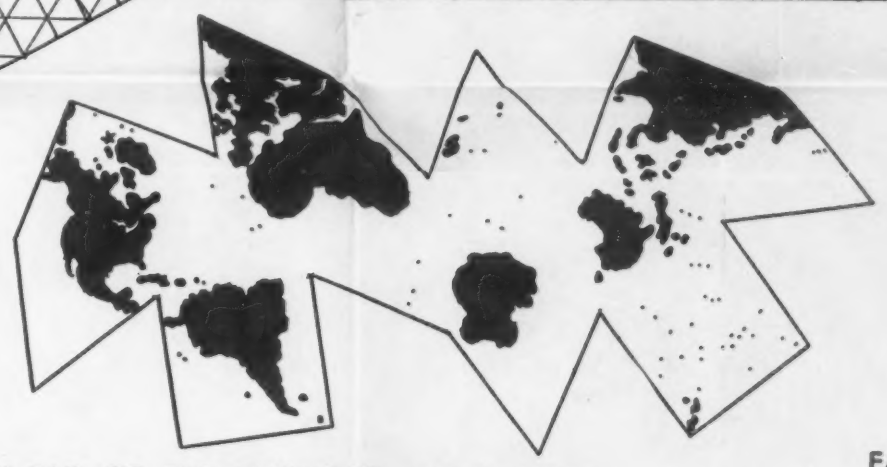
ONE CONTINENT

Bottom of the Aeronautical Ocean

ONE OCEAN

Admiral Mahan named it. The British discovered and used it.

SCALE:
angles
each 36
i.e. 60°
border
150 nau



EAST BY SAIL—TO THE ORIENT VIA GOOD HOPE

From the Spanish Main via the Piratical Indian Waters. 12,000-mile great circle route from New York to Australia.

EAST BY STEAM
TO THE ORIENT VIA

NORTHWARD TO THE ORIENT AND NORTHWARD TO EUROPE

Old and new worlds on either hand. Russia overhead and McKinder's World Island trisected.

STRATOSPHER

European trian
altitude merry

WORLD MA
ON DYMAXION PROJE

BY RICHARD BUCKMINSTER FULLER AND MARGARET MACE, A.M.,

ASSISTED BY: CYNTHIA LACEY, CARL O. HOFFMAN, TRUMAN F. PEEBLES, J

Employing only great circle grid reference and comprising variab
boundary scale of sections, and universal viewpoint; i.e., the Eart
astronomical zenith are always perpendicularly above and below eac
corresponding terrestrial and celestial sections are always para
congruent throughout.

SCALE: Sides of main triangles and squares are each 3600 nautical miles, i.e. 60° of arc. Each small border interval equals 150 nautical miles.

Copyright 1944 by Richard Buckminster Fuller

EAST BY SAIL—TO THE ORIENT

From the Spanish Main via the Pir
great circle route from New York to

NORTHWARD TO THE O

Old and new worlds on ei
World Island trisected.

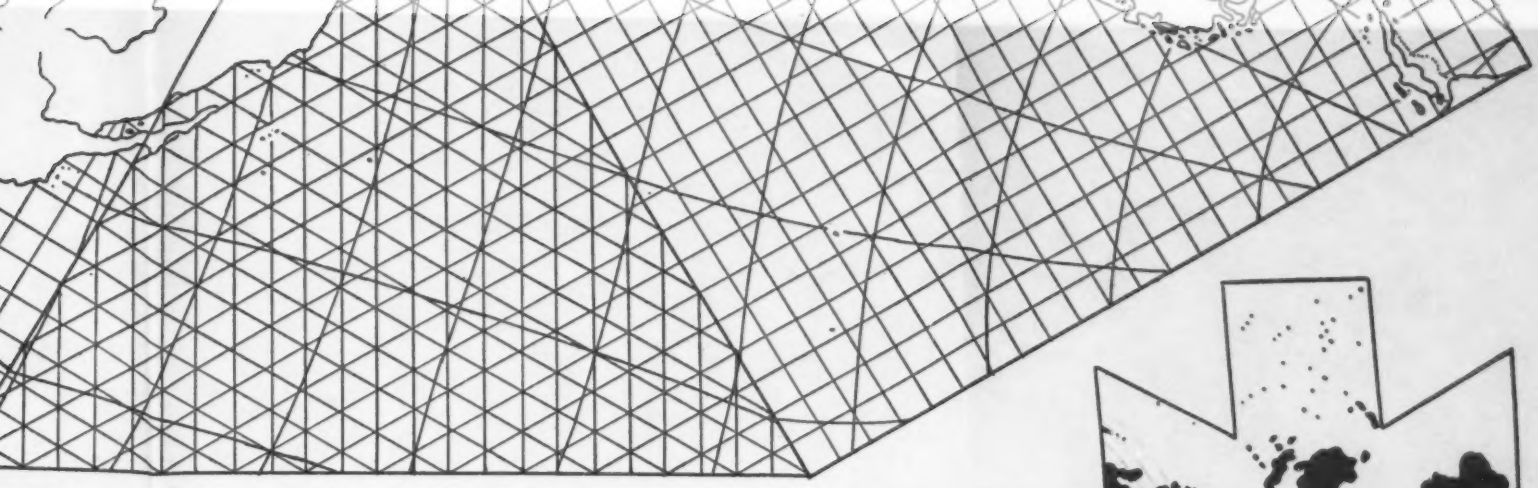
SCALE: Sides of main triangles and squares are each 3600 nautical miles, i.e. 60° of arc. Each small border interval equals 150 nautical miles.

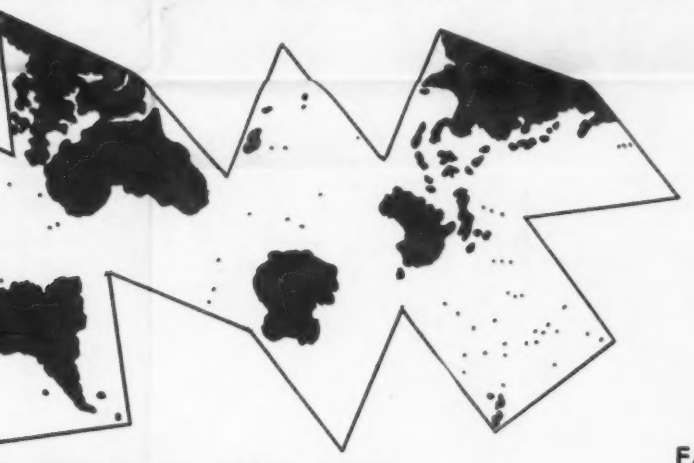
ON

ASSISTED

Employ
bounda
astrono
corresp
congru

Copyri





E ORIENT VIA GOOD HOPE

via the Piratical Indian Waters. 12,000-mile
New York to Australia.

EAST BY STEAM
TO THE ORIENT VIA SUEZ

TO THE ORIENT AND NORTHWARD TO EUROPE

worlds on either hand. Russia overhead and McKinder's
trisected.

STRATOSPHERE STRATEGIC

European triangle controls the
altitude merry-go-round.

WORLD MAP
ON DYMAXION PROJECTION

BY RICHARD BUCKMINSTER FULLER AND MARGARET MACE, A.M., ASSOCIATE

ASSISTED BY: CYNTHIA LACEY, CARL O. HOFFMAN, TRUMAN F. PEEBLES, JAMES McSWEENEY

Employing only great circle grid reference and comprising variable focus, uniform boundary scale of sections, and universal viewpoint; i.e., the Earth's center and the astronomical zenith are always perpendicularly above and below each point, wherefore corresponding terrestrial and celestial sections are always parallel and angularly congruent throughout.

Copyright 1944 by Richard Buckminster Fuller

Patent applied for.

UNIV. OF MICH.

Fluid Geography

BY RICHARD BUCKMINSTER FULLER

IT is a sailorman's credo that there is a generic difference between himself and a landlubber. While admitting that sailor blood sometimes may be trapped inland for several generations, he believes that it never loses its dynamic proclivities. Though landlubbers may frequent the seas by political appointment, tourist urge, or commercial necessity, conscientiously memorizing nautical language and techniques, the sailorman believes that they are fated to wear these acquisitions only as paraphernalia, distinctly superimposed upon their static roots. He reasons, therefore, that while a Kansas Citian may get to have four stripes, that unless he has inherited seagoing corpuscles, he must remain strictly corny, not salty.

Irrespective of the validity of this credo, there exist fundamental differences between the practical requirements of the sailorman's and the landlubber's lives. By exigencies, sailors have come to be the only men of commerce dealing directly and daily with the mechanics of the stars. Confronted with large quantities of unknowns intervening between identified ports, they came early to rely upon instruments and skills of the intellect, upon scientific imagining. In principle, 'blind flying' has been employed at sea for centuries. Without thinking of themselves as cosmogonists, sailors naturally develop a spontaneous cosmic viewpoint. They view the world from outside; they 'come upon' the land.

But not so the landlubber. Though half a millennium has passed since Copernicus and Galileo urged upon educated people that the heavens were not turning about the fixed earth, landsmen in general and even their rock mounted astronomers persist in 'seeing' the sun 'set' and 'rise' in their personal lives.

Intending to help their children to grasp the 'very difficult' concept of total heavenly motion, the landlubber theoreticians have devised planetariums within their great cities. Instructed by this device, the children approach personal conviction of the ceaseless motion of the planetarium

heavens, only to be thrown into life-long confusion at the critical moment as the closing landlubber phrases come to their stimulated attention: 'Now the sun is rising again in the East, the lights are coming on, the machine stops, and we return you to New York' (to the 'practical' life in which the sun, as a handy gadget, still zooms around the contentedly static earth).

To the landsman 'the East' and 'the West' are places, to the sailorman they are directions in which he may move. To the sailorman entered upon the great Pacific, it is final proof of the landlubber's nonsense that the sun is not only forced to do this rising and setting act, but perversely to do so on the wrong stage. Viewed from the Pacific, the sun 'rises' from the Occident and 'sets' in the Orient.

By exigency, too, sailors constantly exercise their inherent dynamic sensibilities. The ceaseless universal motion of the sailorman's life persists in his brain, even when he is landed 'on the beach.' For hours and days after he has come in from the sea, his legs go on adjusting him to the slowly heaving motion of Fifth Avenue. It isn't hard to convince a sailor that the watery, grey-mist horizon toward which he may be sailing is rolling down to reveal the sun, or that his circular horizon segment of the moment is one little wet spot on a great sphere, ponderously rotating to obscure the sun to the westward. He sees everything in motion, from the slopping of the coffee in the pot to the peregrinations of the major magnitude stars. Amongst all these relative motions, the pole star alone seems to float motionless as the world's mooring buoy in the sky.

To the static-minded landsmen, it is an insensible statistic that the moon is about 239,000 miles away from the earth. To the sailorman, it is a natural sensation that the moon-earth pull is so great as twice daily to be able to lift many feet aloft the thunderous tonnages of water upon which he sails. By measured reasoning he 'sees' the moon lifting the water as it circles after its rotating and orbiting mothership Earth. So fast is the orbiting that the sailor knows it is difficult to obtain an accurate navigational sight from the moon. However, to the static landsman, that moon seems to hang motionless as a luminous flat medallion in the periodically glimpsed scene.

To the landsman, a trip around the world means the conversion of a bank account or an Irish Sweepstakes prize into a procession of hotels; to the sailorman, it is the logical fulfillment of his work, punctuated by visits to 'the beach.'

While it seems that a preposterous case of rationality versus irrationality can be made in favor of the sailor, what is really being demonstrated

here is a principle transcending identity with either the sailor or the landsman. One common observation of an effect of that principle is 'Necessity is the mother of invention.' The sailor is much better acquainted with that trying dame than is the landsman, if for no other reason than because land activities generally are based on eight-hour workdays, after which the office and factory are shut down; whereas the sea can never be shut down. While physical laws persist both on land and sea, their slow articulation on the dry, crystalline land could be disregarded for two-thirds of the day. The landsman stables the horse, garages the car, or merely walks into his house and sits down. Inertia, unchallenged, promotes careless philosophy. Every day the seafarer is exposed to three times the necessitous experience, for even when off watch he is still in a dynamic environment. Moreover, the mutability of the liquid state and the proportions of tonnage and velocity to which the sailor is continuously exposed are many times those encountered on the land. Thus by compounding of factors, technology advances far more rapidly at sea.

If we will remember that leverage, for instance, as a universal principle may be abstracted from immediate identity with sea gear for reapplication on the land, we can readily understand how the technical advantages gained on the sea gradually come to satisfy land emergencies. In the light of this technical leadership, we can understand why rule of the world derived from rule of the sea.

Frequency of technical emergency is accelerated to even greater extent in the gaseous state. Airmanship emergencies require the most exquisite of solutions. In short order aeronautical engineering has reapplied to its needs all of maritime technology. While the air technology may not as yet have taken complete leadership away from the technology of the sea in the pacing of man's affairs, it hastens inexorably to such predominance.

With the land as the bottom of the new unbroken air ocean, as so brilliantly taught by George T. Renner of the Civil Aeronautics Authority to elementary school America; with sailors, aviators, and landsmen all crossbreeding into a dynamic world citizenry; and with historical events accelerated from a frequency interval of centuries to intervals of hours, all men are, so to speak, now in the same boat and are necessitous among other items, of a precise means for seeing the world from the dynamic, cosmic, and comprehensive viewpoint.

The map opposite page 120, which is the primary exhibit of this article, was invented for this purpose, and while it is certain to be bettered by subsequent inventions, it is for the moment the most reliable comprehensive projection, in that it describes the earth's surface with the minimum

total score of distortions from the many well-known geometrical processes inherent in translation of the angle and scale information from a spherical to a flat surface.

Presently we will discover why distortion is at a minimum. The mechanics of this projection, for those who enjoy inspecting the intracacies of the engine room, will be exposed toward the close of this article. The mathematics will be found to be as neat and stark as the buckets within a turbine casing. But for the moment what is important is that the trend forecaster can rely implicitly upon the impression of shapes and relative sizes and distances to be derived from this comprehensive device. We may therefore proceed at once to ascertain the inherent advantages and make trial of their ability to reveal major trends in world affairs.

This new projection is particularly successful because it makes possible the reassembly all on one plane of each and any of the continents without broken contours. Further, it makes possible the assembly of those whole continents in any of the arrangements in which they occur relative to one another on the globe as one explores successively the infinite number of great circle continuities. This new map is unique in that the continental contours are transferable in unbroken integrity from their spherical disposition to the flat map representation without perceptible deformation or modulation of size and with uniform scale measured in great circle arc segments bounding each component section.

Unblemished by the peripheral sinuses necessary, first, to the scoring open and, secondly, to the peeling of any solid, this continental contour integrity is the joint result of a new mathematical discovery on the one hand and on the other of emancipation from the formal cartographic tyranny traditionally imposed by the Poles.[1]

[1] In the 1 March 1943 issue of *Life* I published a world map on the Dymaxion projection, with thermal latitudes shown in color. The dymaxion grid was there orientated from the North Pole, placed symmetrically at the center of a square, and the Greenwich meridian cutting across the square at 90°. This was irrespective of the favor to the land masses (obtained in the map published in the NEPTUNE), *Life* deeming it essential that their readers recognize the familiar polar landmark which none of them had ever seen.

My first world map, entitled 'Dymaxion Traffic Chart' was published in 1927 in my book *Time Lock*. It is a perspective projection of the land hemisphere with the French Riviera at its center, and shows the North Pole a fifth of the way down top center, and the Aleutian Chain at the very top. Most of the Americas, Africa, Europe and Asia can be seen, though the southern half of South America, Southern California, Capetown and the Indo-China to Australia areas are missing. Numbers of little airplanes are shown, flying the logical world air routes — circling the Arctic as a major traffic turntable, as well as crossing through Europe to Dakar, over the Atlantic to Natal and up the chain of the Americas. Spotted all through the then unpenetrated Arctic and tropics are shown a number of dwelling machines, modern environmental control devices which would make possible maintenance of service-conditions for the air ports in these then unlivable areas. To the best of my knowledge, this is the first world map which shows the comprehensive air traffic. It was republished in *The Architectural Record*, January 1934, p. 10.

My second world map, copyrighted in 1934 and again published in 1938 as an end paper of my book *Nine Chains to the Moon*, was my first experiment with unique projection methods. It was a

As indicated in the miniature arrangements surrounding the large map, there are many alternate assemblies, the components of which always total up as a complete map of the world.[2] Each, by 'picture psychology' focuses attention on the central portion of its mass, yet retains all other factors in appropriate contributory status. For instance, one of these pictures the sailorman's One Ocean World, fringed by the shoreline fragments which are his particular concern. It discloses the relative vastness of the Pacific and emphasizes that ocean's longest axis, from Cape Horn to the Aleutians. Oriented about the Antarctic, the waters of the Indian and Atlantic Oceans open out directly from the Pacific as lesser gulfs of the one ocean.

To convince himself that picture psychology is not an esoteric mystery of painters, the reader has only to compare the impressions derived from looking first at the one-continent arrangement and then at the one-ocean assembly. Turning away and reporting his impressions, he would be inclined to testify that these maps were composed of different components; that the one continent map was comprised of seventy-five per cent dry land area, that the one ocean map was comprised of ninety per cent water area. The fact is that both maps are composed of the same pieces. Though less dramatic than the example presented, the many other possible arrangements are endowed with equally unique psychological differences. Each of the arrangements is as important as any other, depending upon the geographical location with which the individual has habitually been identified.

The sailor may ascertain by inspection the most advantageous courses to his many world ports from the tactical center of that watery workaday world. So far as he is concerned, the whole world is one ocean, one-quarter of whose uneven bottom crops up through the surface in peaks and plateaus. When he comes in to the shore, he is coming in to the peak of a mountain range about five miles high. To our modern cosmic sailorman, coming in to an airfield in Tibet over the Himalayas is approximately the same sensation as coming in to Puerto Rico over the Antilles ranges rising abruptly 30,000 feet above the Nares Deep.

one-continent map in which all visible error was massaged into the ocean areas. It was done with an integrater and a series of center lines from centers of areas, a method impossible for popular duplication or for any navigational means. Its main purpose was to clarify the one-continent concept which joins the chain of continents together over the Aleutian route. It was subsequently used in the February 1940 issue of *Fortune* to demonstrate the relationship of world population and the world energy slaves, and has been hung in the Smithsonian Institution.

[2] To facilitate the experiments of those who may wish to cut out and rearrange the squares and triangles, a limited number of copies of the map have been reprinted on a durable light cardboard. These may be ordered by NEPTUNE readers from The Southworth-Anthoensen Press, Portland, Maine, at $1.00 each, postpaid.

There are also many rearrangements of the map to emphasize whole continental masses. By means of these elective arrangements, our thinking may be realistically insinuated within the special geographical environment of the people of any one world area as predicated upon their own set of conditions of direction and proximity to all the rest of the surrounding world. It is in this feature that we discover the dynamic leverage afforded our world appraisal by this device. No longer need the American continents, for instance, with only twelve per cent of the world population, occupy relentlessly the central and non-distorted portion of the world map, assigning fifty-two per cent of the world's population to an insignificant, fragmented, and distorted Asiatic borderline position.

In the particular assembly chosen for the large display, one sees all the continents linked together without visible distortion, without a break in their contours, for the first time in history.

The sailorman's interest in world history relates only to the net difference in means of travel between component parts of his unit globe. All history 'pays off' to him in total sustainable knots. The shrinking dimensions of his world are computed in relative velocities.

We can see by experiment with this map why he laughs at the suggestion that 'East is East and West is West and never the twain shall meet,' for he sees that men as individuals have not only moved in the total course of time in all directions over the face of the earth, but *that they emigrated essentially out of one major pool of civilization,* which was Indo-China. Here East and West were originally one. From this one major pool there grew *two main spearheads* which we have come carelessly to identify as unrelated. This division into East and West occurred as the offshoots drew into diametric global positions in the course of their eventual encirclement of the earth. Growing out of the same unit mass of civilization, the eastbound and westbound spearheads progressively absorbed the lesser sources and their tendrils in Africa and South America, as well as the interweaving complex migrations.

The differences between the two spearheads existed only in the effects of environmental changes upon their cumulative technologies. The spearheads attained extreme diametric east-west remoteness in the period approximately called the Dark Ages.

The sailorman, alert to currents, can see the flows of history as the static historian fails utterly to do. He sees how some people have turned adversities into technical advantages, how they have gradually reduced the limitations to their elected motions, and how they have in fact accelerated their movements.

Let us retrace on the new map the major civilization flows, in order to see more clearly the historical significance of our present dynamic world conditions.

Both major migrations appear as the gradual extensions of the horizon by successive generations. Because everything flows in the direction of least resistance, and because the heat to the south was too great and likewise the cold to the north, the least resistant directions were approximately east and west. The next extensions of the generations are directionally random because the geography is random, but they are extremely uniform in the unseen thermal latitudes.

Establishment of these two great world trendings was unplanned by any systematic organization of society. These divergent trends are the articulation of biological forces demonstrating progressive equilibrium everywhere throughout the universe. Their dynamic inter-relationship, as modified by the total geographic scene, determines our fate.

Springing jointly from the Indo-China area, the spearheads both start in an easterly direction, but split at the Malayan tip.

One main stem grows in a general northeasterly direction along the islands close to the Chinese and Siberian coast, along the Aleutians and eventually down the coast of the Americas, with myriads of subsidiary spearheads penetrating inland from all along the main tendril. The nearer to the beginning of the main stem, the larger and more plentiful were the branches.

As offshoots of this first major spearhead coasting northeasterly, many tribes penetrated the Mongolian hinterland, passaging westward to the north side of the enormous Himalayan ranges. The vastness of this region lost them for millenniums, even to the point of seeming extinction so far as the people still remaining in the land of their origin were concerned. Historically, these lost migrants are not heard of again in India until, as the Mongols, called Moguls, they come over the mountains in the days of Ghengis Kahn to rule their sedentary forebears. During the course of the thousands of miles and thousands of years of the many separate inland trekings, the appearances of the individuals develop distinct and unique characteristics. Many demonstrate color evolution as a result of sustained changes in radiation conditions.

Many of these tribes reappear to the westward all the way from the Mediterranean to the Arctic Sea. They arrive in successive waves, for instance, as the Hellenes in Greece, and the Hungarians and Tartars along the Danube. Some of these tendrils doubled back toward the Pacific. Fragments of their more recent and vivid easterly motion have some-

times obscured from anthropologists the preponderently westward pattern of the early Asiatic migrations.

Somewhat similar technical evolution characteristized all of these people's wayfaring. They were constantly on the move because of the sharp changes of the northerly climate and vagaries of the sparse vegetation. Because of this mobility, they developed sheerest efficiency in their mobile living and hunting apparatus and in their survival routines. These wandering hordes, equipped for their inland migration with already efficient technologies won from the sea, subsequently devised portage efficiencies which enabled them to overpower the more easy-going southerly peoples as they encountered them.

Despite this impressive inland migration, the greatest mass of the easterly spearhead's main stem stayed near the sea and fished and farmed along the fertile shores of the many river mouths of the China coast, where their progeny still exist as a teeming marginal life.

Reeling our continuity backward millenniums to the original ancient pool of civilization in Indo-China, let us inspect the coursings of the second major spearhead.

This second spearhead, which broke off from the first at the Malayan tip, drifted out into the myriad islands intervening between China and Australia. Though part of this seaward drifting was by accident, part of it must have been attempted by choice and as such constituted considerably more daring than that demonstrated by the people who hugged the coast. The separation of the spearheads constituted a first-screening of psychological types. This psychological screening imposed by elective dealing with the dramatically presented problems of the unknown offshore deeps has been repeated constantly in subsequent history. For this reason sea history plays an important part in developing the psychological factors of modern problems.

Subsisting on the less fertile soil of the islands, and of necessity forced to wander from time to time, the people of the westerly spearhead learned to navigate or control their course of direction between the islands, to identify their chances with the favorable winds. Gradually they learned to make the passage even with less favorable winds, by quartering down wind, and finally by right-angling. In time they developed techniques for sailing better than a-beam to the wind. From this broad reaching they learned to point up even closer toward the direction from which the force came. Eventually they learned to turn the forces to their service, rather than to fight them or to give way to them. They discovered that they could challenge their fate successfully. Next they learned to translate this

angular wind advantage into increased speeds. Out of this technical about-face accomplished by the island sailors of the Southwest Pacific grew the second major world migration, trending to girdle the world in a northwesterly direction. This second migration got underway in its ultimate direction at an accelerating technical advantage over that of the northeasterly bound or number one spearhead.

Developing its technology at a slower pace, the major northeasterly spearhead came naturally and in due course to evolve the square-rigger out of its down-wind sailing junk. The fore-and-aft rigs of the northwesterly bound spearhead evolved from the swift South Seas proa or double-ended outriggers and catamarans. This second spearhead, having completed its U-turn and now westbound in the face of the prevailing winds, renegotiated the Malayan tip. It then worked westward along Indian Ocean shores until it reached the Persian Gulf.

How can we be so sure of all this? Because in marked contrast to the fragmentary character of man's land-evolved mechanics, dug up only from ruins, every one of the boats and sailing types evolved throughout these earliest historical motions of man are *still in use and may be found in operation today* under the very same rules of technical logic and thinking as characterized their slow invention in the very same environment and part of the world where they were created. It is not necessary to guess how these ancient technical developments were used and, therefore, what they implied. What is more, boats were able to carry larger cargoes of the components of civilization than could be carried overland by men or beasts. Boats may be found in every phase of transition. Choosing at random we witness, for instance, the single log evoluting into the compound log raft bearing a straw thatched hut, or the hollowed-out hulls replaced by ribbed and stretched skin kayak evolving into the canvass-decked outrigged rowing shell, or the half-raft-half-hull sampans, or the portable American Indian canoes, or the round basket boats rolling down the banks of the Tigris and Euphrates Rivers. The dhow, demonstrating great advance in sailing technique, is today the work boat of the Persian Gulf. It is the same fore-and-aft rig with which man negotiated the westerly passage of the Indian Ocean.

In design, building technique, and materials, the dhow follows the practices of Biblical and pre-Biblical times. It can point up into the wind more closely than the best of the America's Cup Defender sloops, though the handling of a dhow's spars is most crude and difficult by comparison.

Beating up the Red Sea and negotiating the Arabian Desert in the first overland navigation by caravans, the dhow builders again fashioned the

same kind of ships in the Mediterranean, where they appear as the early vessels of the Phoenicians.

The major westerly spearhead is here wedded with the Hellenese tendril from the faraway northeasterly spearhead, as the people of the Peloponnesus and Phoenicians clash and integrate. This marks the first important phase of our intimate history of civilization. The conjunction of their respective advanced techniques, occurring under more favorable climatic conditions than those to which the Hellenese had been forced to accustom themselves, compounded to bring forth a civilization so distinctly in command of its environment as to provide the first large increments of time in which to demonstrate the arts, sports, and philosophy. The two Asiatic migrations and the sea-borne spearheads are the mobile flanks to and provide the leadership for the progressively settling down population in their wake. The latter come to make up the great body of early Mediterranean population. This cross-breeding pool is what we call western civilization.

The fundamental difference between the Asiatic people and those of Western Europe and the Americas is intimately associated with these two fundamental histories of technical relationships to forces. While neither the major northeasterly nor the major northwesterly spearheads blindly opposed the forces, they respectively demonstrated diametric methods of using them. They demonstrated diametric attitudes toward life and death themselves—of ready commitment of self to death by the eastbound Asiastics and stubborn refusal of it by the Westerners. To the Asiatic, riding serenely downwind, often over the horizon never to return, it is logical and noble that life may be suddenly terminated. He does not question the forces, the omniscience of the deities. Any back-eddying on the downstream flow is ignoble. Hara-kiri will cancel the ignominy.

The westernbound spearhead people of Europe and of the Americas in particular, were repeatedly shuttling to windward and back, working the adverse force. The challenge provided by death has invoked amongst them the advancement of technology in general but in particular in medicine, resulting in marked extension of the life span. The unnaturalness of death to these people has caused its threat to outweigh ignorance and tradition in the vital emergencies and to admit science at the eleventh hour in a popular application, the extent of which has not been equalled in any other of its potentials.

It is sound scientific speculation that the Garden of Eden episode documents the first psychological difference between easterly and westerly

faced peoples. Adoption unto himself by the individual of the deity's knowledge of good and evil as first exhibited in the legendary beginning of the westbound civilization, illustrates this fundamental difference between flowing with forces and turning them by rationalization into multi-direction advantage.

Both concepts are noble. One concept obtains immediate serenity by complete commitment to the sagacity of the Almighty, mysteriously bespoken by all events beyond the seeming control of his routine functions. The other concept wins serenity by faith in the ultimate over-all sagacity which therefore assumes welfare of the many to be implicit in every adversity. It gains its nobility, however, by assuming personal responsibility to discover and nurture into realization the universal benefits which, though tendered by the Almighty, must be earned by truthful labor.

Reaching the Americas by the uphill route, the northwesterly spiral had acquired a myriad of technical advantages proportional to the multitude of adversities. This technically enhanced spearhead of society we have appropriately identified as the industrial. The American industrial civilization has been likened to a salmon who insists upon climbing waterfalls in order to propagate. Now ages old, no logic could justify sudden cessation of that force-eating northwest trend.

Of course, east was to meet west. They met first in Greece and thereafter repeatedly as Vandals, Huns, etc. But they met for the first time after having come completely around the world in opposite directions to close the circle, when European voyagers met the American 'Indians.' Of course, westerly-bound was certain to go into the psychologically strange encounter under adverse conditions. Of course, westerly-working is ultimately certain to turn the impact of the major trend forces to advantage. Already westbound has pushed eastbound three-quarters of the way back.

These population and technology flows are implicit in the comprehensive concept of the world which the accompanying map dramatizes, and typify the big motions that the sailor comes naturally to comprehend and cogitate by realistic imagining faculties. He also sees the whole world, its waters and its atmospheres, its electrical properties, as a continuously and reliably operating mechanical system.

Long before the movies came along to provide Disney-like educationals, Rear Admiral Alfred Thayer Mahan, U.S.N., described for popular envisioning how the British sailormen had surreptitiously discovered that there was only 'one ocean,' near to whose center in the low forty latitudes around the Antarctic, there roared a made-to-order, one-

way merry-go-round, to carry them swiftly eastward to the Orient, and from there swiftly eastward again into the Atlantic. Thus the English and Europeans logically spoke of China and India as the Far East.

Lieutenant Matthew Fontaine Maury, U.S.N., all without benefit of sympathy in his enterprise, but inspired by the cosmic eyes of the sailorman, made the preposterous proposal that the daily and regular log entries of the sea-captains about weather conditions, wind directions, current drifts, etc., be methodically reported into a central record, despite the fact that the data might be years in reaching headquarters. Silly, impossible, impractical, but Maury, gradually accumulating information, began to advise sea-captains that if in January they took one route and on 15 March another, they would reach their destination ahead of uninformed competitors. So impressively right did his predictions turn out to be that the United States then lent itself with vigor to his world measuring program, adding this dynamic newcomer to the early universal language of green and red running lights, light-houses, and bell buoys — all of them the common language of the world sailormen. The collection of data and scientific forecasting urged by Maury has developed directly into today's forecasting meteorology which guides successful world flight.

However, in Maury's time the down-wind sailing advantages, which could have been popularly employed, never appealed to adversity-embracing northwest spiralers in North America. The Americans wanted to do it the hard way. Noting that the English had monopolized the easterly and down-wind sailing below the continental tips, Americans forwarded their great sea-going tonnages right up onto and across their continent. Thus the American railroads developed out of the ocean steamer technology. Seagoing technology went up on the land onto steel rail canals. By principle, they brought up onto the land their ship masts, yardarms, lifting tackle, as cranes and winches to build bridges and great buildings. It was this ability, demonstrated most dramatically by the American transcontinental railways, to transport unprecedented tonnages, formerly carried only on the water, that was recognized by Sir Halford McKinder, English political geographer, and subsequently by General Haushoffer, the German geopolitician, as tantamount to converting the dry lands to the functions of oceans. This concept formed the nucleus of the present mechanized warfare and automatically precipitated a re-assortment of world economic and military factors.

As the industrial host of the northwest spiral populated the western American coast, it met direct flows of the easterly spearhead for the first time. Soon thereafter its into-the-wind sailing technology literally took

the spearhead aloft to inaugurate the trans-oceanic service phases of the air age westward across the Pacific. The flying ships were heavier than air and therefore were borne aloft entirely by energy control technology. Thus, once more they discounted the easiest-way technology whose balloons appeared centuries earlier on the China coast. Abandoning even motorized and directable lighter-than-air craft, the northwest spiral's airplane technology preferred to depend for its buoyancy one hundred per cent on projections of the intellect. Now proven far swifter, safer, and higher flying, this modern stratospheric sailorizing is demonstrating dramatically to the static-minded landsman that he is indeed living in an all-motion dynamic universe. Here the real principle of isolationism demonstrated its own fallacy. Isolationism was something deeper; it was staticism, blind inertia. When you have a whole continent to yourself, thousands of hours away from others, you can play ostrich or any other game, year in and year out, and you can falsely attribute your advantage to Santa Claus or any other cause and no one can deny the error. But if you want to play ostrich on Broadway, you are liable to get knocked over from behind.

Now, as land and air navies grow rapidly, while colliding in cataclysmic demonstrations, the sailorman's viewpoint becomes ever more popularly cogent. And that viewpoint, enhanced many-fold by new instruments and instantaneous, world-girdling communication, begins to see the spinning little world even more neatly. As yet somewhat ahead of popular comprehension, the modern sailor has investigated the higher reaches of the world's thin wrap of atmosphere. He now sees that not only does the Earth spin eastward, but that the water upon its surface, though displaying many a back-eddy, also spins eastward in net motion and at a greater velocity than the easterly spinning of the earth below it. Freer still of land obstacles, he finds that the atmosphere also spins in a net easterly direction at an even faster rate, and that the atmosphere's main flows circle primarily around the Arctic and Antarctic Circles, while its back-eddies articulate storm-breeding counterspirals downward at the Poles, with a steadily flowing back undertow around the Earth's Equator known as the 'trade winds.'

Thus the sailorman discovers, to the surprise of the static-minded landsman, that the earth is not spinning in space under its own momentum at a slowly running-down speed, but discovers that forces are pulling the Earth around, the elements in their more plastic condition pluming forward to reveal the pull.

Thus also the sailorman discovers, to the surprise of the landsman,

that it is only one-third the distance in the stratosphere from Kamchatka to Alaska as from Alaska to Kamchatka, provided one's plane can average two hundred miles per hour. He also discovers that a seventy-mile-an-hour dirigible could not make that stratosphere flight at all. He discovers that he was wiser than he knew in sticking to his intellect flying.

By flight in the stratosphere Arctic Circle, in present trans-oceanic equipment, it is quicker to go to Russia from Alaska via Greenland, and it is much quicker to go from Norway to Minneapolis via Siberia and Alaska than to back 'uphill' via Greenland. This is information that yesterday's practical people would have said was of no importance. It will certainly not be ten years before this is more important information to most people than the Pennsylvania Railroad time-table is now. Our new map has the ability to demonstrate relatively greater air distances by appropriate arrangement.

The sailorman knows that the library globe is mounted in an azimuthal circle, and its polar axis is tipped only to demonstrate the theory of the earth's motion relative to the sun. Observing how much complication is introduced to inadequately reveal a somewhat irrelevant fact, the twentieth-century sailor classifies this library globe as a pretty contraption, as beguiling and misleading as the planetarium in its ineffectiveness. Forced to deal ever more realistically with a spherical world, he found the globe was a miniature plaything, too small to provide him with important navigational data beyond the most sketchy plans of great voyages. A globe large enough to reveal working data on hazards and aids to navigation would lose any ship in its vast innards. Sailormen need both sectional charts and comprehensive maps.

Then, too, it became evident that one can never see the whole world at once by means of looking at the globe. One cannot see even half of it, due to the rapid increase of curvature tangential to the lines of perspective. The viewer, holding the picture in his brain, could spin the globe and piece together the imaginary continuity. A typical landlubber invention designed to correct this shortcoming was recently exhibited in a New York City museum. This globe was big enough to permit the viewer to stand inside. The usual exterior surface data was inverted to the interior. However, unless one could see through the back of his head, vision was limited as before to less than one-half the surface. Though hailed by the intelligentsia, this item disgusted the sailor.

Preposterously distorted in its Polar Regions, Mercator's cylindrical map, tangential at the Equator, was none the less preferred by the sailor to the globe. He found Mercator's map could be unrolled to represent the

whole world. So long as man's comings and goings were centered within the warm belt girdling the Earth at right angles to its axis, the Mercator map was a pretty satisfactory affair.

But as suddenly as cities are now being wiped out by air bombings, there has come upon the people the necessity for seeing the world vividly as have the eyes of the sailorman. Suddenly, that is, within actual months, people have come to realize that they can girdle the planet in an infinite number of directions. The world has been surprising itself by coming in its own backdoors and down its own chimneys from every unlooked for direction. This has called for a revolution in map-making and in cartographical principles such as history has never seen. A need has risen for new methods of peeling data off the globe and for assembling the peelings in such a manner as to gain useful knowledge of the spherical coursings.

While still imbued with the static pictures and the traditional thinking, people viewed the first appearance of the new maps as a novelty. Any inclination to comprehension of the relative merit of the different maps as a result of comprehension of the principles by which they were constructed was thrown into utter confusion by the welter of pedagogic terms: sinusoidal, conformal, azimuthal, gnomonic, orthographical systems, scared the layman away from making criticism of the appearance of Australia as a kidney bean three times the size of South America. Feeling the progressive urge to global comprehension, he produced a mass market for commercial globe manufacturing, but after a few swift inspections, these were relegated to decorative functions rather than to be his daily tools. Much more important to him were the newspaper maps of the daily war scenes.

Out of the newspapers and the novelties, people are beginning to see that there are some interesting new angles and proportions. Unfortunately, most landlubber cartographers prefer to impress people with the difficulties and esthetics of their art rather than with implications of the dynamic geography of a world-industrializing people.

People are catching on that great circles constitute the spherical straight line and that there is an important continent at the Antarctic and not a jagged, icy fringe along the bottom of an east-west Mercator layout. This advance in popular awareness is despite the fact that the traditional suppliers of maps provided streamlined equatorial Mercator world maps for all the allied war offices and accessory bureaus, upon which maps the ocean distances between Greenland and England appear as greater than those between Tokio and San Francisco.

People are learning that 'via the North Pole' is the shortest great circle distance from America's midst to the center of population of the world. But when people were told that Tarawa represented the first major gain in the direction of Tokio, they were not well enough versed in their geography to realize that announcement that the Marines had taken the North Pole would have put the United States closer to Tokio's center, and that the Marines were actually farther from Tokio than Chicago is from London. And even those professional geographers and military tacticians who did know that these were the proportionate distances by great circle, have not, unless skilled in the dynamic sailorman's thinking, realized that in the terms of the air motions which twist the great circle courses all out of shape, the North Pole is a third nearer to Tokio than Tarawa when full advantage is taken of atmospheric motions.

Because of this latter fact, it becomes obvious that the kind of map that static cartographer's can produce can only partially educate the people, that is, up to the realistic great circle concept. All known traditional projection methods fall far short of providing a comprehensive, sectional cartographical device which may be mutably arranged in any direction in such a manner as to bring focus to bear on any of the dynamic interrelationships of the world's surface affairs.

One such sailorman's mid-twentieth century invention is the mutable map presented herewith. Appropriately, its faces represent the facets of the monometric construction shown in the accompanying drawing, which drawing represents the vector equilibrium of a sphere.

Unlike all known preceding projections, which represent transfers of spherical data to plane surfaces tangent to the sphere only at one point, as in the case of the azimuthal or gnomonic projection methods, or only along one central line, as in the case of the Mercator, or only along one or two segmental arc lines, as in the conics, this projection is one in which the coincidence with the projected sphere occurs all along the complete boundary of each section of the projection, thus retaining the unique cartographical feature of being the only projection in which uniform great circle scale characterizes the logical terminal edge of each section to be projected, that scale being maintained intact after transfer from the sphere to the flat surface of the map.

Sailorwise, this new projection is made from the cosmic viewpoint, that is, the astronomical zenith and the center of the earth always remain respectively vertically above and below each and every point of the surface of the cartographic data. Not only is this true in its spherical arrangement

but also in its planar projection into the sections of the comprehensive map.

Because the enclosing border scale cannot be elongated, distorted or contracted and represents a great circle bent flat into a one-dimension line, the adjustment of the contained spherical surface segment to a plane surface segment must be satisfied by interior contraction of the data instead of by exterior stretching, as in all other methods of projection. Because of this feature, the several pieces, of course, fit neatly together, being the mutual sides of adjacent polygons and being separated by the same great circle or straight line. Because the area of a circle increases as the square of its radius, the same error outwardly disposed must be distorted to four times greater extent than by inward disposition.

The segmentation of the earth's surface into eight triangles and six squares is not in any sense a matter of esthetic choice. It represents the only subdivision possible by means of this universal projection viewpoint, for the radial and chordal lengths must be identical in order to allow this symmetrically hinged opening of the sphere.

Having six axes and four dimensions, its parts may be rearranged to continuously unpeel the globe in all directions. Gnomonic projections through the surface facets of any of the regular polyhedrons will serve to provide a variety of sectional world surface maps. Striking an optimum between angular contraction and numbers and sizes of pieces, an icosahedron is the least distorted, for these projection purposes, of any of the regular solids. However, the spherical vertexes of the icosahedron's twenty triangles must be reduced from 72° to plane triangular vertexes of 60°, a reduction of twenty per cent, which percentage times the number of pieces, gives the total distortion. On the other hand, the Dymaxion's fourteen pieces accomplish translation with a distortion of only sixteen per cent, the Dymaxion's spherical triangles being only 70° and the vertexes of the square bearing the same percentage relationship between the spherical and the plane figure.

The Dymaxion projection method of transferring spherical data to the plane surface is extremely simple. Because of its universal viewpoint, it need deal only with the surface of the sphere and the plane surface of the map. A lattice of four great circles is formed about the sphere, each intersecting the other in such a manner as to subdivide each circle into six symmetrical arcs of 60°. This lattice provides fourteen spherical surface areas, eight of them triangular, six of them quadrangular. These spherical triangles and squares are equi-lateral. The surfaces of these

triangles and squares are then interwoven with great circle grids, the triangles by a three-way grid of great circles and the squares by a two-way grid of great circles. These grid lines spring from uniform scale modular subdivisions of the 60° arc sections in as fine a degree as is desired.

The geographical data coinciding with these grids is then transferred to eight equi-lateral plane triangles and six plane surface squares. For purposes of this translation, the plane triangles and square have been prepared as follows: their surfaces are subdivided by respective three-way and two-way grids of straight lines. These straight lines spring from modular subdivisions of their boundaries which correspond in scale and number to the subdivisions of the original spherical arc segments of 60°. The spherical geographical data is then posted to corresponding positions in the appropriate plane grid spaces. The spherical great circle grids are thus treated as constituting straight lines in the plane geometrical surface. The principle of treating great circles and straight lines as constituting one and the same thing, effects the distribution of the angular contraction in a concentric disposition on the plane sections.

Key to understanding why this method accomplishes its translation with a minimum of distortion is that it treats the 180° spherical gores in two ways. The irreconcilable conditions of convergence and parallelism, characterizing the terminals and mid-part of the 180° gores, are treated separately and symmetrically as triangles and squares respectively. All other projections impose the advantage of one feature against the advantage of the other by trying to solve both convergence and parallelism by one grid. These resolved gore parts of the Dymaxion map, by treating these conditions separately, allow four-dimensional unwrapping of the sphere.

The First American Steam Passenger Line to South America

BY FRANCIS O. BRAYNARD

WHEN in the spring of 1852, M. F. Maury, the oceanographer, addressed a memorial to Congress urging American steamship connection with the Empire of Brazil, he unconsciously began a movement that was to result, over ten years later, in the establishment of the first regular American passenger steamer service to South America. This line was to be known as the United States and Brazil Mail Steamship Company. Its ten-year period of operation is the subject of this paper.

The legislature receiving Maury's proposal was the first session of the Thirty-Second Congress. That body had only recently launched a comprehensive program of subsidization for North Atlantic steamship lines which had already borne fruit in the dramatic Collins Line. Maury was dazzled by stories told him of the wealth and future of the vast Amazon River valley. Jealous of Northern industry and commerce, he was also most anxious for the development of Southern seaports. It was the custom of the American business houses which traded with Brazil to send their correspondence to that country via England at that time. Mail by British steamers to England and back to Brazil took from forty to forty-five days, while American sailing vessels direct from New York to Rio rarely made the run in less than fifty days. Above all, the regularity of the British lines gave them an advantage over American sailing ships. Express steamships, argued Maury, of speed equal to the famous Collins liners could make the voyage from Norfolk to Rio in twenty days, with a stop at Para, a port near the mouth of the Amazon. Such a service would place South American markets at the feet of North American merchants.[1]

[1] The facts do not altogether support this statement. Even during Maury's time, our foreign trade to and from Brazil was second only to our commerce with Great Britain, and this without any regular steamship line. England's Royal Mail Line was run on an annual subsidy of just under one and a half million dollars in 1851. By 1872, Great Britain had a fleet of seventy-one steamships operating on regular lines to South America. Quicker means of communication brought control of credit and exchange, but did England's share of Brazil's trade increase over that of the United States in proportion to our country's efforts (a bare $150,000 annual subsidy as compared with England's approximately one and a half million dollars)? Between 1851 and 1860, Britain's trade with Brazil rose

It would lead to a rush of immigration to our sister continent, immigration which would soon populate the vast Amazon River valley with millions of new customers for our manufactured products. Customers, continued Maury, in the same glowing vein, who would be so eager to produce that they would not think of competing with the United States in the tremendous carrying trade that would spring up. His enthusiasm knew no bounds. He declared:

> The question of navigation and commerce with the Amazon and up the Amazon, the greatest river and the most fertile river-basin in the world, is the greatest commercial question of the world.[2]

That others believed as Maury did is illustrated by a notice in the *National Intelligencer,* 6 August 1853, regarding the so-called Amazon Steamship and Trading Company of New York. This concern was purported to have secured a number of land grants along the banks of the Amazon, and to be building a large steamer and several smaller river vessels. Nothing more is known of this projected service.[3] American consuls at Rio, Maranham, Pernambuco, Santos and Rio Grande do Sul seconded Maury's suggestion in their reports, continually citing England's successes and America's failures in the financial and commercial fields of their areas. The Civil War added to the intensity of these pleas. Confederate privateers and high insurance rates wrought havoc with the American merchant marine. Pride, as well supposed economic necessity, was also becoming a factor in the viewpoint of these consuls and other American citizens living and trading in Brazil.[4] Nevertheless, it was not until several years later that Congressional action was taken on these proposals.

In March 1864 a bill 'authorizing the establishment of ocean mail service between the United States and Brazil' was reported out of committee in the House of Representatives. This document proposed that the United States and Brazil postal authorities join to form a line of first-class

eight per cent; that of the United States rose eighty-six per cent, without a steamship line. *Hunt's Merchants' Magazine,* L (1865), 198-201. These trade statistics used in 1865 do not take into account the matter of 'invisible exports' which made up a large share of Britain's foreign trade, and which would make the comparisons mentioned appear quite different had they been included.

[2] U. S. Senate, *Senate Miscellaneous Documents* (32 Cong. 1 Sess., Vol. 629 U. S. Govt. series), Document 83, p. 5. U. S. Government record volumes in the leading libraries of the country, are arranged by number in a series running into the thousands. 629 is the number of the volume used in this instance. Hereafter, references to documents in this series will be given with the volume number first, followed by the document's number where there is a number, followed by the pages used. Using note number 2 as a model, here is an example: *U. S. 629,* 83, p. 5.

[3] *National Intelligencer,* 6 August 1853.

[4] *Hunt's Merchants' Magazine,* L (1865), 202. *U. S. 1190,* Part 1, pp. 609-611, 615-624, 626-631. *U. S. 1227,* Part 1, pp. 752-818.

steamships. The vessels employed were to be of at least 2,000 tons burden, and were to make twelve round-trip voyages a year. Rio was specified as the southernmost terminal of the service, while a port in the United States north of the Potomac was to be its northern anchor. Stops at Saint Thomas, Bahia, Pernambuco 'and other such Brazilian and intermediate port or ports as shall be considered necessary' were to be added to the schedule. Both governments were to share the costs of this concern, and it was provided that the United States should not pay over $150,000 per year.[5] To secure the three ships needed for a monthly service was to be a most difficult task, especially as they were required to be of 2,000 tons. The largest steamers then afloat, with the exception of the mammoth *Great Eastern,* were just under 4,000 tons.

The opposition to this bill centered around three principal points. Most vociferous were the men who disliked all government subsidization of private enterprise. There were also those who declared that it was more important to subsidize a railroad line between the east and west coast. Finally a few opposed the measure on the ground that, as the Rebellion was still in progress, it was no time to spend money on a steamship service to far-off Brazil. During the debate, it was brought out that only American-flag vessels were to benefit by the proposed grant. The Postmaster General was to be empowered to ask for bids on the service by advertising in Washington, Baltimore, Philadelphia, New York and Boston papers for sixty days. If and when a responsible concern agreed to the requirements set down in the bill, if and when its bid had been accepted, if and when a similar separate agreement had been made with Brazil by the company, then the Postmaster General was to contract for such a service for ten years. Any such agreement must be put into effect on or before 1 September 1865. Steamships used must be equipped with the latest improvements and should be subject to inspection by the Navy Department.

Many were the references to the ill-fated Collins Line, which had collapsed in 1858. Strangely enough, it was used as an example both by the proponents and opponents of subsidization. Those in favor of government aid said that the line would never have existed at all had it not been for subsidies. They added that, although its failure was partly due to mismanagement, it might well have been able to continue had not Congress suddenly withdrawn its financial support. Those against government subventions brought up the Collins fiasco as an example of extravagance and inefficiency bred by government subsidization of private in-

[5] *Congressional Globe,* 38 Congress, 1 Session, p. 1653.

dustry.[6] On one point there was no discussion, let alone argument. No one doubted that it was absolutely vital for the United States to have a merchant fleet of its own serving South America. At that time, economists did not consider, as they do today, that shipping was an article of export. Consequently no one recognized that it might be just as unprofitable an article of export for the United States as it was profitable for England.

On 25 May 1864, the House unanimously approved the one minor amendment added to the Brazil ship bill in the Senate.[7] It was signed by the Speaker and returned to the Senate. There, on the following day, the President *pro tempore* also signed the measure. From there, the bill was dispatched to the President's desk. On 28 May 1864, President Lincoln gave it his signature.[8]

Before discovering how the Postmaster General put the Brazil ship bill into effect; it would be worth-while to glance at the condition of the American deep-sea merchant marine. Between 1828 and 1864 the nation's fleet carried less and less of America's foreign trade. This was due partly to an increase in our foreign commerce, but primarily to a decline in our ocean-going fleet. In 1858, the year in which the Collins Line came to its end, our ships carried 73.7 per cent of our exports and imports. In 1864 the per cent had dropped to the lamentable figure of 27.5.[9] America's failure to adopt steam instead of sail, her failure to make use of iron instead of wood, and, finally her refusal to give up the paddle-wheel in favor of the propeller must be placed high in the list of factors responsible for this decline. The gold rush added to the country's passion for the westward movement, draining potential seamen from the Atlantic and using all available capital in inland enterprise. The Civil War would seem to rank first in the immediate causes of the decline of the United States merchant marine. Nevertheless, the ever-increasing cost of labor in America, our backwardness in the iron industry, and the government's failure to pursue a steady and generous subsidy program before and after the Civil War must also be listed among the reasons for our decline as a deep-sea maritime nation. The ten-year history of the United States and Brazil Mail Steamship Line illustrates only too well the weakness in America's effort to operate foreign-sea tonnage.

Postmaster General Blair's first action had to do with Brazil's part in carrying out the new piece of legislation. Receiving full assurances of co-

[6] Ibid., pp. 939, 1653-1673, 2117-2118, 2283, 2372-2376, 2435-2436.

[7] An amendment that authorized the underlining of several words in part of the measure, see Appendix A.

[8] *Congressional Glube*, 38 Congress, 1 Session, pp. 2476-2484, 2578-2587. See Appendix A.

[9] *U. S. 1856*, pp. lxxi-lxxiii.

operation from that nation's *chargé d'affaires* at Washington, he called for the desired bids, inserting his advertisements 17 June 1864. Bidding was closed on 10 October 1864. Three legitimate proposals had been received. They were as follows: (1) James A. Raynor proposed to perform the service as required for an annual subsidy of $143,400; (2) C. K. Garrison offered to operate the line as specified for $135,000; (3) Jose F. Navarro, head of the New York, Nuevitas, and Cuba S. S. Co. bid for the service at $120,000 a year subsidy. This third bid was conditionally accepted on 2 November 1864, after the Post Office Department had made inquiry and secured satisfactory assurance that the concern and its guarantors were sound. Permanent acceptance of the contract was made dependent on the action of Brazil. The name of the Navarro firm was changed on 27 February 1865 to The United States and Brazil Mail Steamship Company. The Postmaster General agreed to this change after satisfactory evidence had been presented showing that the identity of the persons concerned with the old and new organizations had not changed. Thomas Asencio was the agent for the firm, known commonly as the Brazil Line.

Difficulties arose from the beginning. On 15 March 1865, Brazil Line officials asked an extension of the proposed running time, explaining that first-class steamers could not make the voyage to Rio in eighteen and three-quarters days as proposed or return in sixteen and three-quarters. This request was denied because it involved a radical change from the terms agreed upon in the bid. It was declared, however, that should Brazil suggest that the scheduled time be extended, the Post Office Department might consider the modification.

Legal tangles, too, plagued the Postmaster General. Six months after the award had been made, C. K. Garrison entered a protest declaring that the Navarro firm's bid was illegal and that his should therefore be accepted. He based this claim on the following points. The Navarro concern was operating and organized under New York State laws. The laws of New York require all shipping firms incorporated under their jurisdiction to state the ports which their vessels serve. Navarro had chartered his service to run only between New York and Cuba. He, therefore, had no legal right to bid for a contract entailing operations with other ports. The question was an important one, said William Dennison, the successor to Blair as Postmaster General. He submitted it to the Attorney General. That official, replying on 12 June 1865, declared that the Navarro firm had had no right to bid for the service, that the lapse of time prohibited the acceptance of the C. K. Garrison bid, and that new proposals would be required. After hearing lawyers from both sides, Denni-

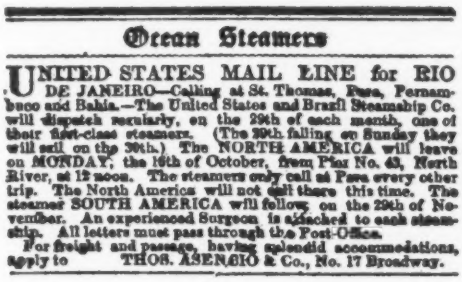
son approved the Attorney General's conclusions and called for new bids. Strangely only the Navarro firm bid a second time. Dennison does not comment on this, and the matter was dropped.

Brazil, upon accepting its part of the contract, insisted that the port of Para be included on both outgoing and return voyages. Such an addition in service, the Brazil Line maintained, demanded not only more time, but more subsidy. The full $150,000 was thereupon requested from the Postmaster General. It will be remembered that the original act specified that the service must be contracted for no later than 1 September 1865. Dennison was faced with the necessity of making an immediate decision on the Brazil Line's proposal or abandoning further efforts to put the law into effect. On 29 August 1865, impelled by his belief in the importance of establishing direct steam communication between the United States and Brazil, Dennison executed a second conditional contract with the firm. This agreement declared that should Brazil agree to drop Para, the steamship firm would thereupon accept the original figure of $120,000. Otherwise the $150,000 would be the subsidy. The new contract also stipulated that its final consummation was contingent on the successful execution by the line of a corresponding contract with Brazil within a reasonable space of time. Meanwhile, the line was to begin operations without further delay.

Dennison immediately requested the Secretary of the Navy to dispatch an experienced naval engineer and naval constructor to inspect the vessels put forward by the line, and to report not later than 20 September. The contract demanded the company's first sailing from New York on or before that date. Naval Constructor B. F. Delano and Chief Engineer J. W. King were assigned to this duty on 1 September 1865. The company was requested to name a date for the inspection. A week passed and the line had made no move in this direction. On 13 September 1865, following a note on the matter by the Post Office Department, Jose Navarro wrote stating that his firm had not yet decided which of their vessels to use on the first run, but would inform the Department and inspectors as soon as possible. By the twentieth no such notice had been forthcoming. The Post Office Department, therefore, advised the Secretary of the Navy that the company's time would be extended until the twenty-seventh. Three days after this extension, the Brazil Line announced the steamship *Havana* to be ready for inspection. Two days later the inspectors' report disclosed that this vessel was of only 1,802 tons, and consequently not up to the requirements of the contract.

Nevertheless, Jose Navarro, writing on 28 September, informed Den-

nison that he proposed to send the *Havana* off on the next day, trusting to the Postmaster General's 'judgement and generosity' as to whether her voyage would be considered as a separate and independent trip or as the beginning of the company's contract. In reply, Dennison declared that he had no power whatsoever to acknowledge the *Havana's* sailing as a fulfillment of the contract due to her inadequate tonnage. Two days before this correspondence, Dennison had told Thomas Asencio that, although the *Havana* was reported to be a staunch and seaworthy ship, her inclusion in the company's contracted service to Brazil was impossible. Dennison added that he would allow the company an additional month's time should it make application in writing declaring the reasons for the delay. Should the *Havana* leave New York as planned, she would be



Ocean Steamers

UNITED STATES MAIL LINE for RIO DE JANEIRO—Calling at St. Thomas, Para, Pernambuco and Bahia.—The United States and Brazil Steamship Co. will dispatch regularly, on the 29th of each month, one of their first-class steamers. (The 29th falling on Sunday they will sail on the 30th.) The NORTH AMERICA will leave on MONDAY, the 16th of October, from Pier No. 43, North River, at 12 noon. The steamers only call at Para every other trip. The North America will not call there this time. The steamer SOUTH AMERICA will follow on the 29th of November. An experienced Surgeon is attached to each steamship. All letters must pass through the Post-Office.

For freight and passage, having splendid accommodations, apply to THOS. ASENCIO & Co., No. 17 Broadway.

First Brazil Mail Steamship Line Advertisement
New York *Daily Tribune*, 11 October 1865

treated as an ordinary mail steamer, and allowed only the aggregate sum of United States postage on the mail carried.[10] Notwithstanding this point-blank statement, the little steamer sailed on 29 September 1865. Her departure was not advertised in the New York newspapers. She was commanded by a certain M. R. Green.[11] The *Havana* was of comparatively recent construction, having been built at Philadelphia in 1863. She was an iron vessel with screw propulsion. Before 1865, she had been operated for a short while by the Hargous Bros. Company on a run to Havana.[12]

The Brazil Line reported on 19 October that it had two additional steamers ready for inspection. They were the *North America* and the *South America*.[13] The former had served in the Union blockading fleet during

[10] *U. S. 1263*, 121, pp. 1-23.

[11] New York *Daily Tribune*, 30 September 1865.

[12] J. H. Morrison, *History of American Steam Navigation* (New York: W. F. Sametz and Co., 1903), p. 470. American Bureau of Shipping, *Record of American and Foreign Shipping for 1870* (New York: 1869), no page given. *American Lloyds Universal Standard Record of Shipping, From 1 January 1872 to 1 January 1873* (New York, 1873), Steamship section, p. 16.

[13] *U. S. 1263*, 121, pp. 1-23.

the Civil War as the *Fort Jackson*. The latter was also an ex-member of the navy's auxiliary fleet, during which service she had been known as the *Connecticut*.[14] After the war, the *North America* had been run by Ludlum and Heineken on a service to New Orleans. Both vessels were wooden side-wheelers. They were both just over 250 feet long, approximately 38 feet broad, and 24 to 27 feet in depth.[15] With their thick, erect funnel, their straight bow and squared stern, they were typically American in style. Located just behind the funnel, an uncovered walking beam rose well above the deck. The twin paddle-wheel houses were connected by a thin walking bridge. In appearance they were stout looking craft. Their hull construction was heavy, being made of oak with iron and copper fastenings. The *North America,* built at Greenpoint, Long Island, in 1862, was classed, with her sistership, as one and one-half by the American Bureau of Shipping. The Bureau's ratings went as high as two and one-half, so it will be seen that neither vessel was of the first rank. The *South America* was built in 1860 by Webb at New York. Both vessels were of three-deck construction.[16]

After passing successfully her tonnage and power inspection, the *North America* left for Rio with L. F. Zimmerman in command.[17] Late in November the *South America* was inspected and approved. She was scheduled to sail on the twenty-ninth, but, in order to permit merchants to answer their mail coming in on the *Havana,* her departure was delayed until late on 30 November. As might have been expected, the *Havana* was not on schedule, and the *South America,* Captain Tinklepaugh, sailed without any further delay. She carried fifty-two cabin and a number of steerage passengers.[18] On the following day the *Havana* appeared in New York harbor. From her log it was disclosed that she had struck a severe storm

[14] While in naval service, the *Fort Jackson* was listed as being of 1,770 tons burden. Before the war she had served as a 'river passenger-steamer.' When added to the hastily-built up navy, the *Fort Jackson* was converted into a gunboat of the second-class. She was armed with one 100-pounder rifle, two 30-pound rifles, and eight 9-inch smooth-bores. At the bombardment of Fort Fisher, North Carolina, the *Fort Jackson,* commanded by Captain B. F. Sands, found her place in the third line of the Union fleet. In the last year of the war, she captured three richly loaded blockade-runners. F. T. Miller (editor), *The Photographic History of the Civil War* (New York: The Review of Reviews Co., 1911), VI, 61. See Plate 26.

[15] *South America,* 2,150 53/100 tons. 256 x 38.5 x 24.1, rate of length to beam 6.6. *North America,* 2,085 9/100 tons. 262 x 37.5 x 27.8, rate of length to beam 7.0.

[16] Morrison, op. cit., pp. 458-482. *American Lloyds,* op. cit., pp. 26-27. *U. S. 1417,* p. 41.

[17] *U. S. 1263,* 121, pp. 7-8.

[18] New York *Daily Tribune,* 30 November 1865, 1 December 1865. Captain Tinklepaugh apparently had as interesting a character as his name might imply. He was formerly employed in Vanderbilt's service from New York to Colon (then called Aspinwall), and is described by Tracy Robinson, American diplomatic representative at Panama between 1861-1907, as 'a large, gross, rough, florid, ignorant Dane, a favorite of Commodore Vanderbilt.' Robinson, Tracy, *A Personal Record of Forty-Six Years* (New York: Star and Herald Co., 1907), pp. 29-31.

when approaching her home port which had made it impossible for her to meet the outgoing *South America*. Her voyage from Rio took some twenty-six days and six hours.[19]

Three ships were needed for the monthly service to Brazil. The *Havana* had still not been replaced. The Brazil Line determined to try to build up her tonnage. To this end, a new saloon was added on her upper deck. On 15 December 1865 the company sent the Postmaster General a copy of a statement made by the Deputy Collector of the Port of New York declaring that the *Havana* measured over 2,000 tons. Dennison, already on his guard, answered that only the report of a naval constructor acting on orders from the Secretary of the Navy would be considered. Thereupon the company reluctantly requested a second inspection of the *Havana*. This was effected, but it was not till 29 December 1865, the scheduled date of the vessel's departure for Rio, that a report on the inspection reached Dennison. Despite its declaration that the steamer was still slightly under 2,000 tons, the Brazil Line sent her off on schedule.[20]

On 27 January 1866 the Postmaster General advised the United States and Brazil Mail Line that a number of complaints had been received regarding inadequate passenger accommodations on the line's steamers. No reply was made. Several days later, however, the line requested permission for a change in sailing day. In reply to this the Postmaster General dispatched a strong note to the line declaring that no such permission would be thought of until word was received from Brazil clearing up the contract question. This letter also reminded the concern that:

> the apparently hasty manner in which steamers have been secured and offered for the mail service, scarcely affording sufficient time for their inspection before the date of their departure, and the effort made to procure the acceptance of a steamer which had been previously examined by the naval constructor, and rejected . . . , were not calculated to inspire confidence that the service, if established, would be of the character and grade contemplated by Congress.[21]

The *North America* made her regular sailing on 29 January 1866, with Captain Zimmerman. Several days later the company's advertisement in the New York *Tribune* announced that henceforth the line's ships would leave on the twenty-second of each month instead of the twenty-ninth. The *South America,* which had just returned from Rio, was listed as sailing on 22 February. As she sailed on schedule, it would seem that the Brazil Line had succeeded in securing proof of Brazil's agreement to the con-

[19] Ibid., 2 December 1865.
[20] Ibid., 30 December 1865. *U. S. 1263*, 121, p. 8.
[21] Ibid., pp. 9-10.

tract, although there is no record of this in the annual report of the Postmaster General. In March the earlier sailing date was reestablished.[22] A sign of the continued attitude of suspicion on the part of the Postmaster General is evident in his order of 6 February 1866 to the Postmaster of New York. By this note the New York official was instructed to report to the Department on the total amount of mail carried so far by the Brazil Line's ships, and to report every mail sent by and received from the firm's ship henceforth.

Apparently the Brazil Line was not ready to mend its ways in March of the same year, despite the warning quoted above. On the twenty-sixth of that month officials of the service notified Dennison that the steamer *Morning Star* would sail three days later for Rio. Reports from another last minute inspection did not reach Dennison until the thirty-first. They declared that the vessel was filled with cargo and could not be measured for tonnage. At the customs house the *Morning Star* was listed as being 2,400 tons, while she was declared to be only 1,917 by the records of her insurance office. On 1 May she had been advertised as being 2,048 tons. At that time she was owned by the Star Line of James A. Raynor. 'Of course,' said Dennison, 'no action was or could have been taken on these reports, which were wholly unsatisfactory.' Nevertheless the liner sailed on 29 March, with Captain Howes in command.[23]

Had Dennison been in closer touch with the situation in New York his suspicions as to the instability of the Brazil Line would have been strengthened by the deal involving the *Morning Star*. The securing of that vessel in place of the *Havana* must have been preceded by some lightning-like action on the part of the Brazil Line officials. On the twenty-sixth, Raynor had advertised the *Morning Star* as sailing on 28 March in his New Orleans service. When she did leave for Rio on the twenty-ninth, her departure was from Raynor's and not the regular Brazil Line pier. On 27 March Raynor announced the sailing of the steamship *Merrimack,* later a Brazil Line ship, in place of the *Morning Star.*[24] It is interesting to note that William R. Garrison, C. K. Garrison's son, who was shortly to gain control of the Brazil Line, had an interest in the Raynor Star Line. It should also be mentioned that the *Guiding Star,* a sister-ship of the *Morning Star,* was another vessel that the Brazil Line shortly thereafter pressed into service. These two steamers were quite superior to the *North America*

[22] New York *Daily Tribune,* 3 February 1866, 23 February 1866, 10 March 1866.

[23] Ibid., 27 March 1866, 30 March 1866. *U. S. 1263,* 121, p. 10. Morrison notes that the *Morning Star* was 2,500 tons. Morrison, op. cit., pp. 458-459.

[24] New York *Daily Tribune,* 26 March 1866, 27 March 1866.

and her sister-ship. Both were of more recent construction, and had considerably better passenger accommodations. When on the New Orleans run they were considered the 'most lavishly fitted' vessels in the service. They boasted 270 feet in length, 40 feet in beam, and 25 feet draft. With their Star Line sister-ships, this pair had been built by Roosevelt and Joyce in New York, where they were fitted with beam engines of considerable power.[25]

On 5 April 1866, the Brazil Line's vice-president wrote to Postmaster General Dennison saying that the contract with Brazil had been secured and would arrive on the *North America*. Shortly thereafter a copy of this contract was sent to the Department at Washington. Before the concern's unconditional contract was granted, Dennison insisted on a complete re-examination of the three ships in service: the *North America, South America* and *Morning Star*. As the line continued to operate, we may presume that this examination was passed successfully.[26]

Up to 21 May 1866 nothing had been paid the Brazil Line except the postage on mail carried by the *Havana* on two voyages from New York and one from Rio, a sum that amounted to only $635.19.[27] Even for those on the outside not acquainted with the notes that had so frequently been exchanged between the Brazil Line and Washington, there were indications that the service was none too stable. One was the Brazil's Line's irregular way of advertising. In some months there would be a notice almost every day before the date of sailing, while in other months, weeks would go by without any announcement whatsoever. This carelessness might also be seen in the habit of leaving a sailing notice in the papers several days after the vessel's departure. A third indication was the unwillingness of the line to advertise more than one sailing in advance. This was not at all the custom of other shipping firms, some listing as many as five departures ahead.[28] The sailing of the *North America* on 30 April 1866 was the last under the Navarro-Asencio colors. Before turning to the Garrisons, the line's new owners, it might be valuable to consider more carefully the route served, sailing schedules, the three-ship question, advertisements and a word on the first report from Brazil on the value of the new service.

It will be remembered that the Brazil Line's contract called for stops at St. Thomas, Para (now known as Belém), Pernambuco, Bahia and Rio.

[25] Morrison, op. cit., p. 459.
[26] *U. S. 1263*, 121, pp. 10-12.
[27] Loc. cit.
[28] New York *Daily Tribune*, 10 March 1866, 31 March 1866.

Up until December 1865, Para had been visited only on every other trip, but, from then on, it was listed with the other stops as a regular port of call.[29] Fines were provided by the Post Office contract for failure to live up to the schedule or to stop at any of the regular ports of call, unless prohibited by uncontrollable circumstances.[30] At Pernambuco, the line's ships did not go into the inner harbor, stopping instead in the outer roads.[31] As to the sailing schedule maintained by the Brazil Line throughout its ten years of existance, Saint Thomas was six days from New York, Para, a week from Saint Thomas, Pernambuco six days farther along, Bahia three days from Pernambuco, with Rio five days below Bahia.[32] Under the new owners, as will be seen below, the sailing date was changed to the twenty-third of each month. It will be remembered that the original requirements called for an eighteen-day passage to Rio and a two-day shorter return. With the addition of Para to the route the passage time was lengthened by ten days both to and from Rio. Although Para was located some distance up the Amazon, its inclusion should not have lengthened the voyage by ten days. As a matter of record, it is stated in the Postmaster General's 1867 report that a stop at Para would add only two days to the New York to Rio run. Why then was Dennison willing to let the Brazil Line take eight days longer than the contract called for? Perhaps the original contract schedule was too strict.[33]

After the first round trip, the Brazil Line was required to pay a forfeit not to exceed $500 for every forty-eight hour delay in a steamer's arrival. For delays in departure, $250 for every twenty-four hours was ruled the fine, except in cases of unforseen or uncontrollable events. These exceptions make the ruling seem quite liberal.[34] Three steamships at least were necessary for a monthly service to Brazil in 1865. One would leave for Rio on the twenty-ninth, arrive there about the twenty-fifth of the next month, sail on the second of the following month and reach New York on the twenty-ninth. Ships of the line had nine days in Rio to turn about and start back, while in New York the schedule allowed an entire month's wait. Such an arrangement had serious disadvantages for the merchants using the line. In some respects it was not a real monthly service, for, un-

[29] Ibid., 12 December 1865.

[30] *U. S. 1263*, 121, pp. 15-18.

[31] *U. S. 1611*, 143, p. 111.

[32] New York *Daily Tribune*, 30 January 1866.

[33] Before the war, modern liners of the 'Good Neighbor Fleet' made the run from New York to Rio, with only one stop, in thirteen days, and return in twelve. Their voyage, however, was only 5,0008 miles, while that of the Brazil Line, because of the additional ports of call, approached 5,500 miles. Moore McCormack Lines Inc., *Sailings, 3A* (New York: 1939), no page given.

[34] *U. S. 1263*, 121, pp. 15-17.

less the ship reached New York a day early, the merchants rarely had time to read and answer their mail from Rio and get their replies off on the outgoing steamer.[35]

The first advertisement of the Brazil Line appeared in New York newspapers on 11 October 1865. The line then called itself the United States Mail Line. Besides the regular announcement as to the time of the next sailing, the little notice declared that the vessels of the company had 'splendid accommodations' for both freight and passengers. The advertisement was signed by Thos. Asencio, whose office was at No. 17 Broadway.[36] The last notice published in the New York *Tribune* by Asencio appeared on 30 April 1866.[37]

Richard A. Edes, consul at Bahia, Brazil, gives a word of praise for the much-criticized Navarro-Asencio service shortly before they sold their interest in the firm. He reported on 31 March 1866 that the establishing of the Brazil Line had given American commerce at his port a 'very important stimulus.' He prophesied that the improvement already noted in the coffee, sugar and cotton crops would surely be helped along by the newly-created monthly service.[38] Postmaster General Dennison's 1866 report, from which much of the material given above has been drawn, concludes at this point in the history of the Brazil Line. He brings his statement to an end by saying that he had just been informed that Jose Navarro had sold the controlling shares of his firm to Messrs. C. K. Garrison, D. B. Allen and S. G. Wheeler of New York.[39]

C. K. Garrison, part owner, and W. R. Garrison, his son and soon to be president of the Brazil Line, are interesting examples of the merchant capitalist so conspicuous in American history of the nineteenth century. Cornelius Kingsland Garrison was born of Huguenot stock on 1 March 1809. At an early age he was thrown on his own initiative. His earliest connection with the sea came when he took the place of cabin boy on a Hudson River steamer at the age of thirteen. During the winters he succeeded in finding time to study architecture and bits of engineering in New York. Moving to Canada, his rise was astonishingly rapid. At a comparatively early age he became manager of a large public-works building company. In 1833, however, fearing war between the United States and Great Britain, he returned to America. Turning to transportation, he lent his energies to developing steamboat services on the Mississippi, a business

[35] See Appendix B.
[36] New York *Daily Tribune*, 11 October 1865. See Appendix C.
[37] Ibid., 30 April 1866.
[38] *U. S. 1295*, 81, p. 529.
[39] *U. S. 1263*, 121, pp. 17-18.

which had considerable financial return. When the gold rush began, C. K. Garrison, with foresight, hastened to Panama where he established a banking house that proved a marked success. In 1853, with the aid of Charles Morgan, Garrison bought out Commodore Vanderbilt's Nicaragua Transit Company, a service operating in opposition to the Pacific Mail. Garrison moved to San Francisco in this year with his family to handle the Pacific end of the concern. His salary was $60,000 a year, and he is said to have proved himself well worthy of it. Returning to New York in 1859, he again plunged into coastal shipping. Besides the Brazil Line, he is credited with promoting extensive trading operations with South America. Railroad enterprise also attracted his attention, and, for a while, he was president of the Missouri Pacific. The *Dictionary of American Biography* adds that his other financial operations were of 'great variety and magnitude.' Although his fortune was dented to a certain extent near the end of his career, no doubt partially due to the failure of the Brazil Line, he succeeded in recovering himself to a large degree before his death. According to the flattering report in the *D. A. B.* he was 'endowed with extraordinary foresight . . . intense energy . . . imagination, . . . strong moral principle and . . . unassailable integrity.'[40]

This same source notes that William R. Garrison was born 18 June 1834 in Canada. Spending his youth in St. Louis, Missouri, he moved with his father to California in 1853, where he became identified with various phases of the transportation business. Six years later, in New York, William R. Garrison came to be his father's able assistant in the management of C. K.'s various coastal lines and the service to Brazil. Eventually he assumed the presidency of the Brazil Line. Again following in the footsteps of his father, W. R. Garrison was active in railroading. His chief claim to fame rests on his direction and unification of New York City's elevated railroad system. He died in 1882 from injuries received in a New Jersey railroad accident. Beside his business accomplishments, he was known, says the *D. A. B.*, as an earnest crusader for higher education, favoring in particular the progress of Washington and Lee University.[41]

A particularly noticeable frailty of American steamship enterprise in the nineteenth century was the instability of ownership. The United States has few great shipping families such as those of Great Britain. Shipping has been one of the least inviting fields of investment. The ups and

[40] Allen Johnson and Dumas Malone (editors), *Dictionary of American Biography* (New York: Chas. Scribner's Sons, 1931), VII, 167-168. (Hereafter referred to as *D. A. B.*, with page used.)

[41] Ibid., 172-173. New York *Times*, 21 July 1882. New York *Daily Tribune*, 21 July 1882.

downs of the maritime fortunes of the Garrisons illustrate this unsound situation. Between 1865 and 1867, C. K. Garrison was part owner of five different steamship services, not including the Brazil Line. By 17 April 1867, all these concerns except the Brazil Line had either failed or passed under different management.[42]

D. B. Allen, the Garrisons' partner in their Havana, Savannah and Brazil lines, is a figure about whom very little seems to have been recorded. From the material that exists it may be seen that he had an interest in a number of steamship services besides the Brazil Line. Allen leaves the picture entirely after December 1867 when W. R. Garrison became president of the Brazil service.[43] The third man mentioned in Postmaster General Dennison's report was S. G. Wheeler. It is doubtful whether he owned more than a small part of the Brazil Line. His excursions into the shipping business were even more temporary and less extensive than those of the Garrisons and D. B. Allen.[44]

Garrison and Allen inserted their first advertisement for the Brazil Line on 24 May 1866. In their customary way, they rearranged the wording of the notice and added to the number of capital letters. The *South America,* instead of being called, as Asencio had done, one of our fine new steamers, was dubbed 'the elegant new side-wheel steamship.' Considering that she had been built in 1862, it seems a stretch of the imagination to call her new in 1866, but such a practice was common then as today.

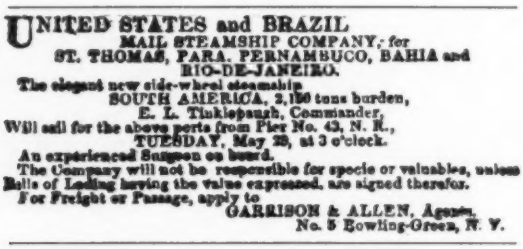
[42] In December 1865, the Garrisons secured controlling interest in the Empire Sidewheel Line to Savannah. This service ceased operations in May 1868. Also in December 1865, the Garrisons began a service known as the Atlantic and Mississippi Line, connecting New York and New Orleans. Competition from these three established lines proved too severe, and this service ended in two months. The day following their purchase of the Brazil Line, the Garrisons and Allen secured Spofford, Tileston and Co.'s Havana Line. This service was dropped in May 1867. In the summer of 1866 C. K. Garrison took over Raynor's New Orleans service, known as the Star Line. The loss of that service's ship *Evening Star,* with all but twenty-three of her crew and passengers occurred while he controlled the line. In February 1867 C. K. Garrison entered into an agreement with the New York and Havre S. S. Co. for a joint service to Europe. To operate in connection with that line's *Arago* and *Fulton,* Garrison transferred the *Mississippi* and *Merrimack* (sometimes spelled *Merrimac*) from the Star Line. Both ships were later to operate in the Brazil Line. Before the summer of 1867, both the European service and the Star Line passed out of the hands of Garrison. Morrison, op. cit., pp. 402, 469. New York *Daily Tribune,* almost daily references from February 1866 to February 1868. See Plate 25. The *Mississippi* is also listed as being a member of the Ruger Bros. fleet operating a New York-Southampton-Bremen service between 1866 and 1870, along with the old Collins liners *Atlantic* and *Baltic,* the old Havre liners *Arago* and *Fulton,* and the *Western Metropolis, Missouri, Ericsson, Ariel, Rising Star, Ocean Queen,* and *Quaker City.* 'Memorial Concerning Ruger's Line To Europe,' 20 January 1870, Files of the American Merchant Marine Institute, 11 Broadway, New York, N. Y.

[43] Allen operated two old Vanderbilt steamers to New Orleans in 1863-1864. He was agent in 1864-1865 for a fleet of steamers running to Panama in connection with a service to California. Two of the captains in this service later commanded Brazil Line ships. Morrison, op. cit., p. 458. New York *Daily Tribune,* 1 September 1865. *Congressional Globe,* 42 Congress, 2 Session, pp. 47, 203, 3553.

[44] New York *Daily Tribune,* 23 August 1867, 28 August 1867, 28 October 1867, 11 January 1869, 11 November 1870.

She was to sail on 29 May. No mention was made of later departures, or of a set sailing day. The service was still unorganized. On the twenty-seventh the sailing day was advanced to Wednesday, the thirtieth, no reason being given. The *South America* departed on that day with a small passenger list.[45]

On 1 June 1866, the *Morning Star* returned from her one and only voyage to Rio. She was transferred to the Star Line, and resumed her



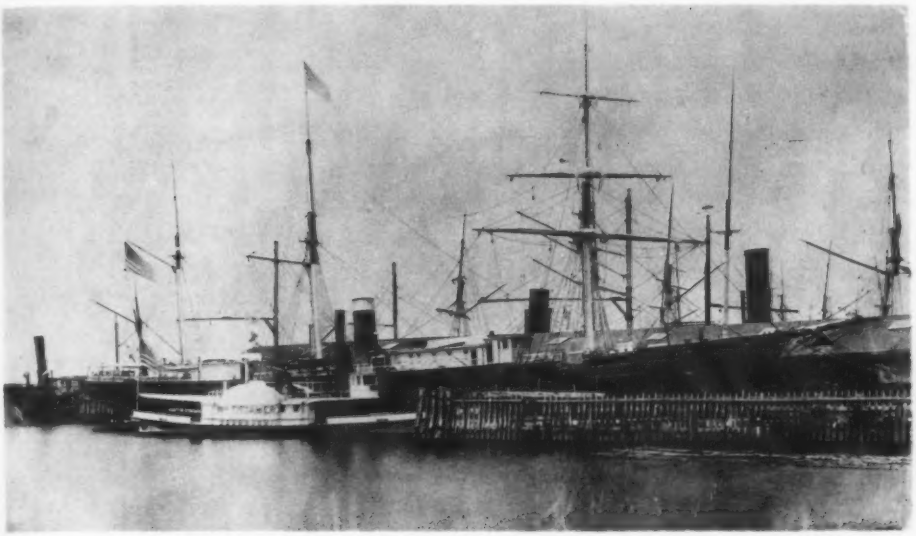
UNITED STATES and BRAZIL
MAIL STEAMSHIP COMPANY, for
ST. THOMAS, PARA, PERNAMBUCO, BAHIA and
RIO-DE-JANEIRO.
The elegant new side-wheel steamship
SOUTH AMERICA, 2,150 tons burden,
E. L. Tinklepaugh, Commander,
Will sail for the above ports from Pier No. 43, N. R.,
TUESDAY, May 29, at 3 o'clock.
An experienced Surgeon on board.
The Company will not be responsible for specie or valuables, unless
Bills of Lading having the value expressed, are signed therefor.
For Freight or Passage, apply to
GARRISON & ALLEN, Agents,
No. 5 Bowling-Green, N. Y.

First Garrison and Allen Advertisement
New York *Daily Tribune*, 24 May 1866

sailings to New Orleans. Apparently Garrison and Allen refused to pay a high enough price for a second voyage. As a result, the Brazil Line was once again without a third ship. On 28 June, the *North America* arrived in New York, having made a record passage of only twenty-five days. It was impossible to turn her around on a day's notice and send her off for the line's June sailing. Without a third steamer, the company had no alternative but to give up the June run. No public announcement as to a June sailing had been made during the month. On 6 July 1866, the service began advertising once again, listing the July sailing. With the *North America* on hand and the *South America* due, the line was at least certain of two more regular departures. Meanwhile, C. K. Garrison purchased the Star Line, making its vessels available for the Brazil service. We shall see that Garrison and Allen relied heavily on these Star Line ships in the months to come.[46]

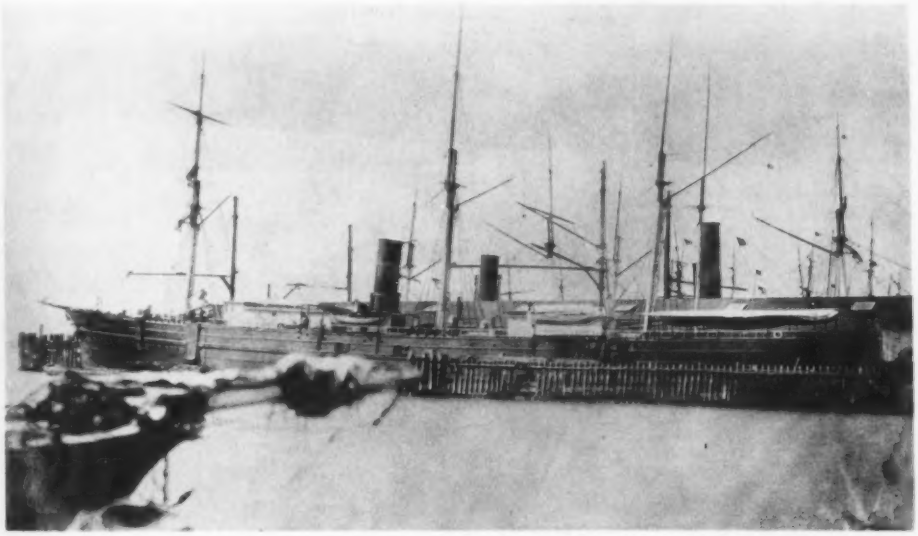
In September the *Guiding Star* was secured from the Star Line. She was a fast liner, holding the speed crown in the New Orleans service by virtue of a passage of five days ten hours from dock to dock. The day following her first sailing with the Brazil Line, Garrison and Allen began the custom of publicly announcing the next three departures in their

[45] Ibid., 24 May 1866, 27 May 1866, 31 May 1866.
[46] Ibid., 2 June 1866, 12 June 1866, 29 June 1866, 7 July 1866.



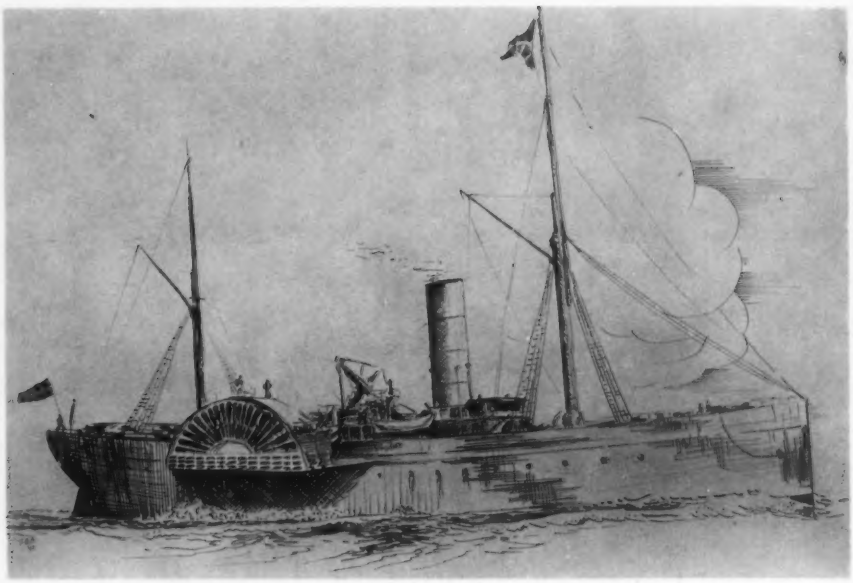
Steamship *Mississippi,* built at Boston in 1859

Reproduced from a photograph in the Peabody Museum of Salem, dated 14 June 1864, showing also the Hudson River milk boat William Tittamer



Steamship *Merrimack,* built at Boston in 1859

Reproduced from a photograph in the Peabody Museum of Salem, dated 31 May [1864?]



Steamship *Fort Jackson* (later *North America*), 1864

Reproduced from a drawing by Francis O. Braynard, based on an illustration in The Photographic History of the Civil War, *VI, 61*

Steamship *Ontario,* under the colors of her first owners, the Boston and Liverpool Line, 1867

Reproduced from a drawing by Francis O. Braynard, based on an illustration in Harper's Weekly, *1867*

daily advertisements, a practice they continued until the last year of the service. Captain W. C. Berry commanded the *Guiding Star,* while Zimmermen and Tinklepaugh retained their positions on the *North* and *South America*. The sailing day was listed as the twenty-second of each month.[47] It will be remembered that the turn about period at New York was a month long. As a result the company, when it had three regular ships, always had an extra vessel on their hands for this period. In October 1866, the *North America,* during her month's stay at New York, substituted for the Havana liner *Morro Castle* for one voyage to Cuba. Such short runs were rare in the Brazil Line's history.[48]

On 18 March 1867, four days before the *Guiding Star* was scheduled to sail for Rio, and twelve days before the steamer *Merrimack* was to make her first run to Havre, their respective owners announced that they had been interchanged.[49] As a result the *Merrimack* made her first of many runs to Brazil. Captain G. B. Slocum, who had just been made master of the *Guiding Star,* sailed the *Merrimack* to Rio, while that vessel's commander, E. Van Sice, remained on the European run with the *Guiding Star*. The *Merrimack* was a vessel of iron construction, boasting 2,199 tons and being of screw propulsion. She and her sister-ship, the *Mississippi,* had been built by Harrison Loring of Boston in 1859. These vessels had both been rebuilt after a year in service, having a wooden deck added to their iron hull. This rebuilding has caused some to claim that they were of composite (part iron, part wood) construction, actually not the case. Both steamers served in the Civil War.[50] On 31 May 1867, the *Merrimack's* name was dropped from the Brazil Line's sailing list, and in its place for the June sailing was listed the *Havana*. This little vessel sailed on schedule, with Captain Slocum, the *Merrimack's* master, in charge. This substitution was made necessary, in all probability, by C. K. Garrison's sale of the Star Line.[51] As before, the line had a three-month respite in which to secure a vessel to take the *Havana's* place in September. Once again the *Guiding Star* was leased, and sailed to Rio. This was her last voyage with the Brazil Line. Later she was operated to Panama for a number of years,

[47] Ibid., 24 September 1866.

[48] Ibid., 2 October 1866. For several months in the winter of 1866-1867, Garrison and Allen experimented with a new name for their three services. Between October and January the imposing title Atlantic Mail Steamship Co. was given at the top of each sailing notice and advertisement of the firm's three lines. This practice was discontinued after 3 January 1867, and the services were again known by their older individual names. New York *Daily Tribune,* 18 October 1866, 3 January 1867 and all the intervening days.

[49] See note 42. See Plate 25 for photographs of the *Mississippi* and *Merrimack*.

[50] New York *Daily Tribune,* 18 March 1867. Morrison, op. cit., p. 459. *U. S. 1417,* pp. 52-53.

[51] New York *Daily Tribune,* 31 May 1867.

after which she disappears from the news.[52] In December, when it came time for the third ship to sail, the Brazil Line apparently planned to do the impossible and turn the *North America* around as soon as she arrived and sent her off again. Such was the purport of a special notice published in New York papers on 19 December 1867. On the twenty-fifth, however, it was announced that the company had secured the steamer *Mississippi,* and that she would sail at noon on that same day, Captain G. B. Slocum in command.[53]

The year 1867 saw the subsidy question settled for the Brazil Line. In the 1866-1867 report of the Postmaster General, the firm is shown to have received $150,00 for that fiscal year, and $100,000 for the first year of operation. One-third of the full subsidy had been deducted from the first year's payment because of the omitted June sailing and the two voyages of the undersized *Havana*. The Postmaster General at this time was Alexander W. Randall. In his report he disclosed his intention of seeking an agreement with Brazil ending the call at Para, an inconvenience which meant the loss of two days and the addition of $30,000 annually in subsidy. Randall stated that the line had carried on its services with fair regularity when the great distance of its route was considered, and when the almost unavoidable delays at the intermediate stops were remembered.[54] After December 1867, Allen's name was dropped from the Brazil Line's advertisements, and William R. Garrison was listed as president.[55]

In January 1868, a substitution was once again made in the sailing lists a few days before time of departure. The *North America* was withdrawn in favor of the *Merrimack*. Apparently the Brazil Line purchased this vessel outright, for she remained in the service until the end of the company. She sailed under Captain Zimmerman on 23 January 1868.[56] With her departure the Brazil Line, under the unified control of William R. Garrison began a period of regularity which, except for one serious mishap, continued until November 1872. During the fifteen months between January 1868 and March 1869, the *Merrimack, South America* and *Mississippi* sailed regularly in the order named. Their departures were nearly always on schedule, and the line came to achieve a stability never before experienced. Captain Zimmerman left the service in October 1868, and was

[52] Ibid., 25 September 1867, 30 March 1868.

[53] Ibid., 18 December 1867, 19 December 1867, 25 December 1867.

[54] *U. S. 1327,* 1, pp. 1-20.

[55] New York *Daily Tribune,* 27 December 1867, 29 December 1867.

[56] Ibid., 23 January 1868. Captain Zimmerman's name is occasionally spelled as Timmerman.

replaced by a Captain Weir (often spelled Wier), who remained with the *Merrimack* until the line ceased operations.[57] This happy period was ended suddenly on 12 May 1869 with the wreck of the steamer *Mississippi,* on her homeward voyage from Rio. The news of the *Mississippi's* loss reached New York slowly and seemed to cause little excitement. The New York *Times* published only one account of the disaster, and that two months later and on the eighth page. This story was in the form of a letter from Dr. Spore, purser of the lost vessel, to his father. It was a highly dramatic report, a review of which might be entertaining.

On 6 May 1869 the vessel sailed from Para. A day later she passed the *Merrimack* heading toward Para. Several days passed without incident. On the evening of the eleventh, Dr. Spore reports, the *Mississippi* laid her course in customary fashion for the island of St. Lucia. Dr. Spore spent a gay evening in the main saloon with the passengers. Going forward at eleven, he noticed nothing unusual and turned in without thought of danger. At 3:30 loud noises on deck awakened him. Noting that the vessel's engines were making full steam astern, he hurried on deck expecting a collision at any moment. The steamer, shrouded in fog, was apparently making no motion one way or the other. Officers were hurrying about in grave silence. Spore soon discovered that the *Mississippi* was fast aground on an island reef. His place was in the saloon, which he found a scene of great excitement, the passengers dressing, shouting and trying to get together their valuables. Calming them with assurances that the ship was perfectly safe, merely on a sandbar, and would be under way in an hour Dr. Spore returned to the deck. A glance over the forecastle rail showed him that the *Mississippi* was wedged firmly on a rocky pile. She was pounding herself in deeper with each successive wave. The tide was going out. At dawn, the ship's officers discovered that they were lodged on a reef off Martinique.

Dr. Spore watched with sorrow as the crew threw coffee over the rail to lighten the ship. 'Every time a full sack sank into the sea,' he wrote, 'it was a $20 gold piece gone.' Two thousand sacks were thus disposed of along with forty tons of coal, and still the ship remained fast. The women and children were removed that afternoon. On shore they were greeted by natives and housed by the mayor of the province. That night, says Spore, was a sleepless one for all who remained on board. The vessel

[57] New York *Daily Tribune,* 24 October 1868, 24 January 1869. Beginning in January 1869, the United States and Brazil Mail S. S. Co. announced that its sailing day would permanently be the twenty-third. Except for chronic lapses in February, always on the twenty-first instead of the twenty-third, this remained the real as well as announced sailing day from New York. The company's steamers reached Rio on the twentieth and sailed for New York on the twenty-eighth.

pounded continuously, sending successive shivers through her whole frame and smashing her fittings, furniture, mirrors and cabin equipment. Aid arrived the next day in the form of two steamers. They were too late, for towing was out of the question. The *Mississippi's* pumps were no longer able to keep up with the innumerable leaks in the battered hull. In the words of Dr. Spore:

> The noble *Mississippi,* after a long and agonizing struggle, has yielded up the ghost — is dead! and we must leave her to rot and disappear on the cruel rocks of Pensonnelle.

The remaining passengers and their baggage were removed to one of the rescue steamers. The crew, spurred on by Captain Slocum, commenced to wreck the vessel, tearing out her decorations and everything movable. After several days of prodigious work, they begged to be allowed to go home. All but ten volunteers, two officers, the purser and the captain went ashore to seek passage to the States. Those who stayed were not allowed much time to continue the dismantling. Coffee gases compelled them to abandon the ship completely. All but the captain and Dr. Spore left the island for the United States. While auctioning off the salvaged cargo and waiting for company instructions, these two, reported the purser, lived like royalty in a home all their own, with servants and horses.[58] The old *North America* was brought out and groomed for service. She sailed on 23 June 1869, Captain Weir in command.[59]

With the June sailing, another term of regularity began for the Brazil Line, a period of prompt departures and fulfilled schedules that lasted until 23 November 1872. During this time forty-one sailings were made from New York. All but seven departures were on the 23rd.[60] In February 1872 a new vessel was listed as part of the Brazil Line's fleet, the *Erie,* to replace the *South America*. Shortly before her scheduled sailing, however, the older vessel's name was replaced, and the three regular steamers made

[58] New York *Times,* 4 July 1869. Morrison, op. cit., p. 495.

[59] Weir, incidentally, belonged to the *Merrimack,* which fortunately had arrived from Rio ahead of schedule on the twentieth. He missed his usual month's stay in New York. Until his arrival, the Brazil Line had been at a loss as to who should command the *North America,* for Slocum of the *Mississippi* had not yet returned from his wrecked liner. The company's advertisements for a month before the June sailing left a blank space where they customarily displayed the name of the departing ship's captain. Weir's departure left his own vessel without a master. By her next sailing day, 23 July 1869 G. B. Slocum had returned and was sufficiently recovered to resume active command and take the *Merrimack* to Rio. Weir apparently wanted to return to his own vessel, and so the next time both he and Slocum were in New York at the same time, he resumed the helm on the *Merrimack,* leaving the older *North America* for Slocum. New York *Daily Tribune,* 22 May 1869, 24-25 July 1869.

[60] Of these seven irregular sailings, four were postponed till the twenty-fourth because the twenty-third fell on Sunday, and the remaining three were made in February, all on the twenty-first as was customary. See note 57.

three more voyages each before another change in schedule was made and actually effected.[61]

On 7 January 1872 William R. Garrison presented a memorial to Congress in which he requested aid for an increase in his line's service. The existing subsidy, he maintained, provided less than half of that allowed on other mail routes. The line's service had been carried out 'with strict economy, with entire fidelity, and to the satisfaction of the Post Office Department and merchantile public.'[62] The service was unable to pay dividends. Two-thirds of our commerce with Brazil was still carried in foreign bottoms. A higher subsidy was essential, he declared, if our exports to Brazil were to equal our imports from that nation. He proposed a semi-monthly service, with steamers running directly between New York and Rio on every other trip. He warned that unless further government aid was forthcoming, the existing inadequate monthly service would be doomed.[63] A bill was presented in April 1872 intended to put into effect Garrison's proposals. It failed to go beyond the first reading stage.[64] This was the beginning of the end for the Brazil Line.

In the winter of 1872, two new liners were added to the run to Rio, the *Erie* and the *Ontario*. They were large wooden propeller steamers constructed for service on the North Atlantic by a Boston mercantile firm. They had proved unable to compete with their iron-hulled rivals on the Atlantic. The *Ontario,* in fact, was the only one of the pair ever to voyage to Europe, making three round trips from Boston to Liverpool before being withdrawn due to ruinous cut-rate practices of the Cunard Line. (Plate 26.) Without a large subsidy it was clearly impossible to operate them with a profit. They were sold at auction in 1868 for half their construction cost.[65] These two vessels, built in 1866 and 1867, approached three thousand tons, were 340 feet in length, had a beam of 43 feet and a depth of 27 feet. They were the product of the George W. Jackman yard at Newburyport., Mass. Their passenger accommodations were

[61] New York *Daily Tribune,* 7 February 1872.

[62] As to the satisfaction of the mercantile public see below.

[63] *U. S. 1546,* 24, pp. 1-3.

[64] *Congressional Globe,* 42 Congress, 2 Session, p. 2797.

[65] The *Erie* became important news shortly later for a cause that we shall soon discover. At that time, the New York *Times* reported that she and the *Ontario* had been bought by the Brazil Line in the fall of 1871, that both ships had made a single voyage for the company and been withdrawn for rebuilding. I can find no record of their departure to Rio before 1873, other than this, and am sure they did not sail on the regular monthly sailing day. It is possible that they were used as extra vessels for middle-of-the-month sailings when the season was at its height. Their rebuilding consisted of raising their wooden bulwarks the height of the deck house, making them four-deck vessels and increasing their tonnage from 2,900 to 3,451. This work was done in a New York shipyard. New York *Times,* 17 January 1873.

excellent.[66] With the *Erie, Ontario* and *Merrimack* as its fleet, the Brazil Line gave promise of improved service. Such, however, was not to be the case. A second marine disaster shook the already weakened fortunes of the firm. The *Erie,* on her first return voyage from Rio, was totally destroyed by fire.

The first news of the disaster reached New York by a schooner that had seen the *Erie* burning. It was assumed that all on board had been saved, for, said those on the sailing vessel, five boats had been seen making for the nearby shore. The *Erie's* crew numbered seventy-nine, and it was presumed that she had about twenty passengers on board. On 17 January 1873 the Brazil Line was informed by telegram of the vessel's loss, although the safety of those on board was yet unconfirmed. Nearly six weeks after the disaster, the bark *Polly Lewis* reached New York from Yokohama via Pernambuco with the full report of Captain E. L. Tinkelpaugh. The liner had sailed for Saint Thomas with twenty-nine passengers on the afternoon of 1 January 1873. At ten that evening, smoke was noticed coming from the starboard side of the galley. Until eleven it was believed that the five hoses trained on the fire would succeed in quenching the flames. Near midnight, the ice house, just forward of the pantry, suddenly burst into open flame. The entire center of the *Erie* was soon burning brightly, and the order to abandon ship was given. All the boats, which had already been lowered and were in readiness alongside, were quickly filled and pushed off. The little flotilla drew away and watched the liner burn. At one o'clock the masts fell in, and the *Erie* began to fill. The fire burned till dawn when the blackened hull finally sank. The lifeboats pulled for shore, twelve miles away, and reached it with all hands. Mails and cargo went down with the ship except for one bag of specie and one hundred sovereigns that were saved. Captain Tinkelpaugh reported that his officers and men behaved bravely and did their utmost to put out the blaze. He concluded his short note by saying that he was sending Dr. Russel, the chief officer, to Europe, so that he could telegraph additional information to New York. The cause of the fire was unknown. A short investigation held in March ended without reaching any conclusion. It

[66] Morrison, op. cit., pp. 402-404. New York *Daily Tribune,* 16 November 1872, 21 December 1872. According to Francis B. C. Bradlee, these two liners were the largest wooden, screw steamships ever built. They were constructed in the heaviest and most substantial way with diagonal iron braces. Their hulls were divided into six water-tight compartments. They offered passenger accommodations for 125 in cabin, and 500 in steerage, with room for 1500 tons of cargo. Their machinery was the product of Harrison Loring, South Boston, and consisted of a set of vertical condensing engines, with cylinders fitted 'fore and aft,' 74 inches in diameter with a 4-foot stroke. Their indicated horsepower was 1700. For additional information on these interesting vessels see Francis B. C. Bradlee, 'The Steamboat *Massachusetts* and the Beginnings of Steam Navigation in Boston Bay,' *Essex Institute Historical Collections,* L (1914), 211-213.

was disclosed, however, that a similar fire had started on the *Ontario,* but been stopped in time to avoid any serious damage. In that case the incident was blamed on weak planks beneath the galley stove, planks that presumably broke and toppled the stove on its side.[67]

As the doctor senses trouble through his patient's pulse, the public watches a steamship line's advance sailing schedule for threats of instability. For the first time since Garrison and Allen took over the Brazil Line, its daily advertisements became irregular. Sailing dates as much as two months out of date were kept in New York papers. Finally, in the winter of 1873, all advertisements ceased. The Brazil Line was apparently marking time until its subsidy ran out. The failure of Garrison's plea to Congress had probably convinced the line's management that the service must be abandoned.[68] Despite lack of sailing notices, the firm maintained its schedule with the liners *Ontario, Merrimack* and *South America.* Marshall Jewell, Postmaster General in 1875 failed to urge a renewal of the contract, which was to expire on 30 September 1875, although he did urge that another and much larger subsidy be awarded a new line. The *Ontario* made the Brazil Line's last voyage, sailing from New York on 23 September 1875.[69]

Because statistics were given so rarely it has been impossible to chart the passenger traffic maintained by this ill-fated service. On a few occasions the daily newspapers gave both the cabin class and steerage passengers. The latter class often numbered over two hundred persons, while there were occasionally as few as twelve and as many as two hundred and fifty in cabin accommodations. Brazil Line passenger lists were uniformly smaller than those of the Pacific Mail, Inman, French and Cunard lines. The great number of large families on the Brazil Line steamers is of note. Families of eight and nine were not uncommon. Considerable Irish immigration to Brazil may also be detected from these passenger lists.[70] They overflow with Michaels, Bridgets and Patricks. The year was the service's

[67] New York *Times,* 17 January 1873, 14 February 1873, 7 March 1873. Note the lack of telegraph communication between North and South America and the round-about means of sending news.

[68] New York *Daily Tribune,* 23-28 October 1873, 9 December 1873, 21 March 1873, 3 July 1875.

[69] Morrison, op. cit., p. 404. *U. S. 1683,* 1, Pt. 4, p. 16. *U. S. 1679,* 1, Pt. 4, p. xii. The last active service of the *Ontario* was in taking the Woodruff Scientific Expedition around the world in 1877-1878, following which she was tied up in Boston, rotting to pieces, and finally in 1885, was burned for the metal contained in her hull. Bradlee, op. cit., p. 213. The *Merrimack* came back to her original port, Boston, and was refitted with triple expansion engine. She operated between Boston and Halifax until lost, when she ran ashore on Little Hope Island, N. S., in a thick fog, 10 July 1887. Francis B. C. Bradlee, *Some Account of Steam Navigation in New England* (Salem: Essex Institute, 1920), p. 128.

[70] For example on the *Havana's* trip of June 1867 there were nine Boyces: Simon, Anna, Lawrence, William, Felix, Thomas, Mary, Cathrine, and the mother Ana. On the *North America's* voyage in July 1867 there were five Gallagers, five Sweeneys, five Boartys, six Lamberts, six Humphreys, five Elys, and five Van Giusons. New York *Daily Tribune,* 22 June 1867, 22 July 1867.

best year as far as persons carried. Each of seven voyages to Rio carried over one hundred passengers in cabin class. The trade from Rio to New York, incidentally, was never as heavy as the run to Brazil.

Throughout the life of the Brazil Line, United States ministers to Brazil and the various American consuls were most energetic in petitioning Washington to improve the steamship service. The arguments they used were much the same as those sent before the establishment of the Brazil Line. To a man, they seemed fired with a crusading spirit for the rebuilding of the American merchant marine. Reduce the tariff on iron, so that American shipbuilders could build cheaper steamers. Repeal the old-fashioned navigation laws that compelled American vessels to be built, owned and commanded by Americans.[71] Give bigger and better building and operating subsidies. Establish lines from New Orleans, Mobile and other southern ports. It is needless to say that the Brazil Line received anything but pleasant comparisons and appraisals. Hardly a word was given in its defense. The fact that it received part of its subsidy from Brazil was another phase of the business that aroused much criticism. As this was a fact, the Brazil Line was compelled to accept slaves as passengers between Brazilian ports, something that the British Royal Mail Line, the Astronomical Line and the French Line would not do.

In conclusion it might be pointed out that there were two chief objections to the Garrison service. The Brazil Line ships were too slow, and their sailings were too infrequent. Foreign lines were adding new and better ships every year. New and faster foreign services were springing up connecting even the smaller Brazilian ports with Europe. Not one American steamship service reached Montevideo, while that port was served by forty foreign steamers. Besides the Garrison proposal, many other bills were submitted to Congress in the early 1870's calling for subsidized services to various South American ports. Bills were also introduced urging the admittance of foreign-built ships to American registry, and calling for rebates on the duty for items of import used in building and repairing American ships. None of these numerous proposals became law. Behind all these suggestions, and behind the 'too-slow and too-infrequent' complaints is an assumption upon which shippers, consuls, and ministers all built their case. America's foreign trade with Brazil, though second only to our foreign trade with Great Britain, was made up largely of imports. In the eyes of the people of that day, such a situation was highly unfavor-

[71] James R. Partridge, U. S. Minister at Rio in 1871, declared that these navigation laws actually placed *'a prohibition upon our citizens* to compete with foreigners . . . in our own trade from the moment they can build or buy or navigate vessels cheaper than ourselves.' The italics are Mr. Partridge's. *U. S. 1523*, 220, pp. 90-92. *U. S. 1568*, 160, p. 111.

able. We had an unfavorable balance of trade with Brazil. Here is the crux of their argument. Faster and more numerous American steamers would change this condition to a favorable balance of trade.[72]

In retrospect those Americans who urged more and faster steamships would have agreed that the Brazil Line was better than nothing, and yet, if increasing exports over imports be their index of success, the line was a dismal failure. During the ten-year period of its existence, the disparity between imports and exports increased very decidedly. True, total trade increased. Some credit must be given the Brazil Line for this upward trend. It should be rememberer, nevertheless, that the trend was also due to the natural commercial spring-back after the Civil War. As opposed to this, our commerce was injured by the bloody war Brazil allied with Uruguay fought with the Argentine. All in all, the Brazil Line, with all its frailties, was probably everything the United States could ask in return for its meager $150,000 subsidy. As a matter of fact, its ten years of service established a record. Up to that date, only one other American deep-sea passenger steamship service to a foreign land had lasted that long, a tragic indictment of America's overseas merchant marine.[73]

APPENDIX A

THE BRAZIL MAIL LINE ACT

May 28, 1864

Chapter XCVIII — An act authorizing the establishment of Ocean Mail Steamship Service between the United States and Brazil.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Postmaster General be, and is hereby, authorized to unite with the general post office department of the empire of Brazil, or such officer of the Government of Brazil as shall be authorized to act for that Government, in establishing direct mail communication between the two countries by means of a monthly line of first-class American sea-going steamships, to be of not less than two thousand tons burdon each, and of sufficient number to perform twelve round trips or voyages per annum between a port of the United States, north of the Potomac river, and Rio de Janeiro, in Brazil, touching at St. Thomas, in the West Indies, at Bahia, Pernambuco, and such other Brazilian and intermediate port or ports as shall be considered necessary and expedient:

[72] The material for this section is taken from a great number of U. S. documents in volumes 1440 to 1546, and from the *Congressional Globe* over a similar period, especially from its records of the first and second session of the 42nd Congress.

[73] While little effort was made to perpetuate the Garrison service, many were the demands for a new line. The Postmaster General urged that a $500,000 subsidy be granted toward this end. The second American line to Brazil was not begun until 1878. Morrison, op. cit., p. 482. *U. S. 1649,* 1, Pt. 4, pp. xii-xiii.

PROVIDED, that the expense of the service shall be divided between the two Governments, and that the United States portion thereof shall not exceed the sum of one hundred and fifty thousand dollars for the performance of twelve round trips per annum, to be paid out of any money appropriated for the service of the Post Office Department.

Sec. 2. AND IT BE FURTHER ENACTED, That the Postmaster General be, and is hereby, authorized to invite proposals for said mail steamship service by public advertizement for the period of sixty days in one or more newspapers published in the cities of Washington, Baltimore, Philadelphia, New York and Boston, respectively, and to contract WITH THE LOWEST BIDDER [underlined words added by Senate's amendment] for the same for a term of ten years, to commence from the day the first steamship of the proposed line shall depart from the United States with mails for Brazil: PROVIDED, That proposals for monthly trips – that is to say, for twelve round voyages per annum, out and back – are received and accepted by him within the limit as aforesaid, from a party or parties of undoubted responsibility, possessing ample ability to furnish the steamships required for the service, and offering good and sufficient sureties for the faithful performance of such contract: AND PROVIDED FURTHER, That such proposals shall be accepted by the Government of Brazil, and that distinct and separate contracts with each Government, containing similar provisions, shall be executed by such accepted bidder or bidders; each Government to be responsible only for its proportion of the subsidy to be paid for the service.

Sec. 3. AND BE IT FURTHER ENACTED, That any contract which the Postmaster General may execute under the authority of this act shall go into effect on or before the first day of September, one thousand eight hundred and sixty-five; and shall, in addition to the usual stipulations of ocean mail steamship contracts, provide that the steamships offered for the service shall be constructed of the best materials and after the most approved model, with all the modern improvements adapted for sea-going steamships of the first class; and shall, before their approval and acceptance by the Postmaster General, be subject to inspection and survey by an experienced naval constructor, to be detailed for that purpose by the Navy, whose report shall be made to the Postmaster General; that the two Governments shall be entitled to have transported, free of expense, on each and every steamer, a mail agent to take charge of and arrange the mail matter, to whom suitable accommodations for that purpose shall be assigned; that in case of failure from any cause to perform any of the regular monthly voyages stipulated for in the contract, a pro rata deduction shall be made from the compensation on account of such omitted voyage or voyages; that suitable fines and penalties may be imposed for delays and irregularities in the regular performance of the service according to contract; and that the Postmaster General shall have the power to determine the contract at any time, in case of its being underlet or assigned to any other party.

Sec. 4. AND BE IT FURTHER ENACTED, That the mail steamships employed in the service authorized by this act shall be exempt from all port charges and custom-house dues at the port of departure and arrivel in the United States: *Provided*, That a similar immunity from port charges and custom-house dues is granted by the Government of Brazil.

Appendix to the *Congressional Globe*, 38 Congress, 1 Session, pp. 167-168.

APPENDIX B

CHART ILLUSTRATING THE THREE-SHIP SERVICE TO BRAZIL

	New York		Rio de Janeiro	
Date	*Incoming Ships*	*Outgoing Ships*	*Incoming Ships*	*Outgoing Ships*
6, 29, 66		Ship I		
7, 25, 66			Ship I	
7, 29, 66		Ship II		
8, 3, 66				Ship I
8, 25, 66			Ship II	
8, 29, 66	Ship I	Ship III		
9, 3, 66				Ship II
9, 25, 66			Ship III	
9, 29, 66	Ship II	Ship I		
10, 3, 66				Ship III
10, 25, 66			Ship I	
10, 29, 66	Ship III	Ship II		
11, 3, 66				Ship I
11, 25, 66			Ship II	
11, 29, 66	Ship I	Ship III		
12, 3, 66				Ship II

New York *Tribune*, 29 June 1866-3 December 1866.

The Polly *of Amesbury*

BY JOHN R. HERBERT

MARINE researchers have found many cases of vessels being the victims of highly imaginative and inaccurate stories,[1] but none is more amazing than that of the old Amesbury-built coaster *Polly,* which for more than half a century was hailed as two different 1812 privateers—and actually she had never been either.

And the tragic part of the *Polly's* story is that the confusion over her status during the War of 1812 obscured her outstanding achievement, that of remaining in continuous service for one hundred and thirteen years, one of the longest records of any vessel in the American merchant marine. (Plate 27.)

However, the arguments over the *Polly's* true history went on for more than fifty years, during which time the *Polly* weathered a three-cornered storm over her true identity.

Sometimes she was hailed as the famed privateer *Polly* of Captain Samuel Clarke Handy of Salem; more often she was reported to have been a privateer commanded by Captain Jeduthan Upton of Salem; once in a great while she was correctly labelled as a plain ordinary faker.

But the *Polly* story can be safely put to bed now as the result of two years of investigation that started with the compilation of registers and enrolments of New England vessels under the direction of John W. McElroy,[2] former deputy archivist for New England under the National Archives Project of the Works Projects Administration.

McElroy's inquiry showed that from the time the *Polly* was built at Amesbury in 1805 until her last enrolment in 1913, twenty-one distinct documents[3] were issued to her in ten different customs districts in Massa-

[1] See two recent books: Charles Edey Fay, Mary Celeste, *the Odyssey of an Abandoned Ship* (Salem: Peabody Museum, 1942); and George S. Bryan, *Mystery Ship, the* Mary Celeste *in Fancy and Fact* (Philadelphia: J. B. Lippincott Company, 1942).

[2] John W. McElroy, now a Commander in the United States Naval Reserve, was chief navigating officer of the Harvard Columbus expedition. See AMERICAN NEPTUNE, I (1941), 209-240.

[3] See complete list at end of this article.

chusetts and Maine.[4] It was not until 1918 that the old schooner was finally broken up.

There are yellow, brittle newspaper clippings[5] in many a museum file telling about the *Polly's* 1812 'privateering exploits' but the story usually came from the lips of a skipper who wanted to give a reporter a good story without too much regard for facts.

Typical of this was the claim that the *Polly* was the privateer commanded by Captain Handy and which captured many a prize before being driven ashore at San Domingo, 10 April 1814 by the British brig-of-war *Barbadoes*. However, the Amesbury *Polly* was merely confused with Captain Handy's *Polly,* since that vessel was a North River type sloop built in Poughkeepsie, New York, in 1801. She came to Salem with a cargo of grain and was purchased for a privateer.[6]

Dimensions of the Poughkeepsie *Polly* are worth contrasting with the 60-ton Amesbury *Polly*. The Poughkeepsie vessel's dimensions were: length, 68 feet, 10 inches; breadth, 22 feet, 9 inches; depth, 6 feet, 11 inches. Her tonnage was given variously as 90 38/95 and 91 38/95. She carried one 12-pounder, eight 6-pounders and a crew of fifty to sixty-five men. Since the Amesbury *Polly* carried a crew of two or three men as a coaster, it has been observed that had she actually been Captain Handy's vessel, it would have been quite a sight to see a little 60-footer loaded down with nine guns and a crew of sixty-five men.

The business of confusing the Amesbury *Polly* with Captain Handy's vessel is simply a case of putting together the two unrelated facts that there was a privateer of that name under Captain Handy and that there was a coaster named *Polly* in commission in 1812 and during the period when the fake *Polly* stories were circulated. Handy's *Polly* is easy to trace and a copy of her log is in the Essex Institute.[7]

[4] List compiled August 1940 by the Work Projects Administration, the National Archives Project.

[5] The Peabody Museum files contain these clippings about the Amesbury *Polly:*

A. 2 February 1890, *Boston Globe:* says *Polly* under Captain Handy captured the British sloop-of-war *India,* value of ship and cargo $50,000.

B. 1 July 1900, *New York Times* reprint from the *Boston Transcript:* says the *Polly,* under Captain Jeduthan Upton, was captured by the HMS *Phoebe.*

D. 4 May 1908, *Cleveland Plain Dealer:* quotes a *Boston Herald* story saying the *Polly* was an 1812 privateer.

E. 1909, newspaper unknown: links *Polly* to Captain Handy.

F. 4 December 1909, *Boston Transcript:* cites Upton and *Polly* account.

G. 15 December 1909, *New York Times:* links Upton to the *Polly.*

H. 2 November 1909, *New York Evening Telegram:* says Upton commanded *Polly.*

I. 10 May 1913, *Boston Post:* says Jeduthan *(sic)* Upton commanded the *Polly.*

[6] Henry W. Belknap has been publishing a detailed study of Salem privateers of 1812 in the *Essex Institute Historical Collections* since July 1942. His account of the *Polly* appears in LXXIX (1943), 268.

[7] Additional facts on Handy's *Polly* may be found in:

But straightening out the *Polly* and Captain Upton is a little more difficult task. Here again is a confusion of facts. The distorted tale, as given to the public for fifty years, claimed that Captain Jeduthan Upton sailed the *Polly* from 7 December 1812 until captured by H.M.S. *Phoebe* 23 December 1812. The story is preceded with a hair-raising yarn[8] about the *Polly* being captured by the British while a coaster owned by Upton, but skippered by a Captain Grant. The British prize crew drank some rum they found on board, so goes the story, fell into a drunken stupor and the Yankees recaptured the vessel. This was supposed to have spurred Upton into privateering and he started as soon as the *Polly* could be fitted out.

Then followed the sixteen-day privateering career of the *Polly* under Upton, according to the yarn.

To unravel the mess, so deftly but inaccurately put together over a half century period with complete disregard for the facts, the first step is to find out what Jeduthan Upton was doing during the War of 1812. The *Salem Gazette* of 5 March 1813 says '*Hunter,* supposed privateer of Salem, Jeduthan Upton master, sent to England, captured by the *Venus,* frigate.' Elsewhere the *Gazette* says the *Hunter,* under Upton, was taken 23 December 1812 by the *Phoebe,* Hillyer, master.[9]

So here are several points set at rights: it was the *Hunter* under Upton, not the *Polly,* that was captured by the *Phoebe* 23 December 1812.

The next step is to separate Jeduthan from the *Polly,* and this is done by looking at the first commission granted Captain Handy's *Polly.* There we find a John Upton listed as Handy's lieutenant. John was probably one of the sea-going relatives of Jeduthan, and the business of confusing Jeduthan, John and the *Polly* is due to the fact that many an account of the *Polly* simply lists 'J. Upton' as an officer. Since Jeduthan was the best known of the Uptons, careless writers assumed that 'J' represented Jeduthan.

Another issue raised in connection with the *Polly* concerns the method by which a privateer was commissioned. The point has been made that an enrolled vessel, given permission solely to engage in coastwise trade, probably could not go privateering without first being registered. Against this theory is the argument that a privateering commission might do away with formal registration. Nothing has been found in this investigation of

A. Edgar Stanton Maclay, *A History of American Privateers* (New York: D. Appleton Company, 1899), pages 231-233.

B. Lieut. George F. Emmons, U.S.N., *The Navy History of the United States, 1775-1853* (Washington: 1853), pages 188-189.

8 *New York Times,* 15 December, 1909.

9 Henry Wykoff Belknap, in letter to author, 24 March 1942.

the *Polly* story to clear this point. But it remains that the Amesbury *Polly* was an enrolled vessel during the War of 1812 and there is no record of any privateering commission having been granted her.

It would seem that the *Polly* story could have been straightened out almost as soon as it started circulation, but actually the years seemed to mellow it, giving it the appearance of truth through constant repetition.

Many were fooled when the Daughters of the War of 1812, on 2 November 1910,[10] solemnly attached a bronze plaque to the Amesbury *Polly*, proclaiming to the world that she was Captain Upton's privateer.[11]

Apparently it was no rash act. The Daughters dedicated the plaque after the *Polly's* history had been investigated by Colonel Archibald Gracie, the Harry Hopkins of the Taft administration.

Why Gracie decided that the *Polly* had been Upton's vessel would be easy to determine if we had his records. But they went to the bottom of the Atlantic when the *Titanic* sank[12] and the Colonel, though rescued, never fully recovered from the shock of the disaster. The question has been asked why the Colonel should have the *Polly* records with him on such a trip and a possible answer seems to be that perhaps he himself was not satisfied with his findings and he had been doing some research with British Admiralty records.

The *Polly* figured in the news in other ways. Some years before, in 1904, when Amesbury had its Old Home Week Celebration, the *Polly* was the featured attraction 'decorated with flags and bunting, saluted with salvos, while her history was given in both poetry and prose by orators of the occasion.'[13]

At one time it was reported that Peary wanted to buy the vessel. At another time she was reported to have made several trips to the Pacific coast in 1849 and she was reported to have sailed around the world.

But the *Polly's* days finally came to an end in 1917 when she took a cargo to Quincy, Massachusetts, and never left port.

She was hauled alongside the Baker Yacht Basin wharf[14] on Town River and was slowly hacked to pieces for firewood. By the fall of 1918,

[10] *New York Evening Telegram*, 2 November 1910.

[11] The *Polly* plaque is now at the Penobscot Marine Museum, Searsport, Maine. It was presented by a relative of a former owner of the *Polly*. Lincoln Colcord, Secretary of the Museum, says: 'We've always been amused at the bronze plaque, assuming it to be hocus.' Concerning the *Polly*, as a privateer, Colcord says, 'it's silly to think of it. She was a very small and very slow and chunky and clumsy bay coaster, that's all. Such vessels could hardly catch up with their own shadows on the waters.'

[12] From a 1913 clipping, month, date and name of newspaper unknown in the files of the Peabody Museum of Salem.

[13] May 1905, name of newspaper unknown, but author's name given as Allen Day.

[14] Now the Quincy Dry Dock and Yacht corporation.

she was stripped and ripped apart,[15] never to go to sea again.[16]

For all her masquerading, there is one thing no one can take away from the *Polly:* she sailed the seas continuously for one hundred and thirteen years, and for this she remains an outstanding tribute to the lasting qualities of American-built vessels and to the skill of American shipbuilders.

SUMMARY OF REGISTERS AND ENROLLMENTS

1. *Polly,* sloop, of Newburyport. Registered at Newburyport 8 October 1805—permanent. Built at Amesbury in 1805. 60 26/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in. Master: William Hooper, Marblehead. One deck, one mast, square stern, a billet-head.
2. *Polly,* sloop, of Marblehead. Enrolled at Marblehead 8 February 1826—permanent. Built at Amesbury in 1805. 60 26/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in. One deck, one mast, square stern, a billet-head. Previously registered at Newburyport 8 October 1805. [Data incomplete. Document missing from files in Essex Institute.]
3. *Polly,* sloop, of Marblehead. Enrolled at Marblehead 9 December 1831—permanent. Built at Amesbury in 1805. 60 26/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in. Master: Philip Trasher. Owners: Robert Hooper Jr., Robert Hooper, John Hooper, William Reed, Marblehead. One deck, one mast, square stern, a billet-head. Previously enrolled (2) at Marblehead 8 February 1826. Surrendered. Property partially transferred. Page No. 24.
4. *Polly,* sloop, of Marblehead. Enrolled at Marblehead 10 October 1838—permanent. Built at Amesbury in 1805. 60 26/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in. Master: Joseph Glass. Owners: Ephrain Brown, Marblehead. One deck, one mast, square stern, a billet-head. Previously enrolled (24) at Marblehead 9 December 1831. Surrendered. Property changed. Page No. 28.
5. *Polly,* sloop of Marblehead. Enrolled at Marblehead 18 March 1842—permanent. Built at Amesbury in 1805. 60 26/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in. Master: Ezekiel Scovil. Owners: Ephrain Brown, Marblehead; Ezekiel Scovil, ——. One deck, one mast, square stern, a billet-head. Previously enrolled (28) at Marblehead 10 October 1838. Surrendered. Property partly changed. Page No. 4.
6. *Polly,* sloop of Boston. Enrolled at Boston & Charlestown 19 April 1844—permanent. Built at Amesbury in 1805. 60 29/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in. Master: John W. Downes. Owners: John W. Downes, Boston. One deck, one mast, square stern, no galleries, no figure-head. Previously enrolled (4) at Marblehead 18 March 1842. Cancelled, property and district changed. Vol. 1844, page 58.

[15] Professor Samuel Eliot Morison of Harvard recalls it was a cold winter and the shipyard workers broke off pieces of the *Polly* to make fires to keep warm.

[16] To the very end, the *Polly* held the imagination of writers. The June 1919 issue of the *National Marine,* giving credence to a rumor that the *Polly* would be recommissioned, said, she 'is as sound and usable as when she slid down the ways 114 years ago.'

7. *Polly,* sloop, of Thomaston, Maine. Registered at Boston 19 April 1845—temporary. Built at Amesbury in 1805. 60 26/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in. Master: William E. Holden. Owners: William E. Holden, Seaville, Maine; James Keen Jr., Thomaston, Maine; Peter Powers, Deer Isle, Maine. One deck, one mast, square stern, no galleries, no figure-head. Previously enrolled (58) at Boston 19 April 1844. Now cancelled, property and district changed. Vol. 45, page 117.
8. *Polly,* sloop, of Thomaston, district of Waldoboro. Enrolled (48) at Thomaston 25 April 1845—permanent. Built at Amesbury in 1804-1805. 60 26/95 tons; length 60 ft. 7 in., breadth 18 ft. 6 in., depth 6 ft. 3 in., Master: William E. Holden. Owners: James Keen Jr. 1/3, Thomaston; William E. Holden 1/3, Seaville; Peter Powers 1/3, Deer Isle. One deck, one mast, square stern, no figure-head. Previously registered (117) at Boston 19 April 1845. Surrendered for this enrollment, district changed. Vol. 12, page 48.
9. *Polly* [rig? hailing port]. Enrolled at South West Harbor, 20 April 1865—permanent. Probably rebuilt as the next document shows that tonnage, rig, hailing port, owners changed between 1845 and 1874. [Data incomplete. Document probably in storage at Bar Harbor and not available.]
10. *Polly,* schooner, of South Thomaston. Official No. 19717—District of Waldoboro. Enrolled (8) at Rockland 4 August 1874—permanent. Built at Amesbury in 1804-1805. 46.11 tons; length 61.4 ft., breadth 13.19 ft., depth 6.3 ft. Master: Chandler Farr, So. Thomaston. Owners: Lewis Arey, sole owner, South Thomaston. One deck, two masts, square stern, a billet-head. Previously enrolled (35) at South West Harbor, 20 April 1865. Surrendered, change of property, district and hail. Vol. 84, page 96.
11. *Polly,* schooner, of South Thomaston. Official No. 19717—District of Waldoboro. Enrolled (21) at Rockland 5 October 1874—permanent. Built at Amesbury in 1804-1805. 46.11 tons, length 61.4 ft., breadth 13.19 ft., depth 6.3 ft. Master: Chandler Farr, So. Thomaston. Owners: Lewis Arey 1/2, Chandler Farr 1/2, South Thomaston. One deck, two masts, square stern, a billet-head. Previously enrolled at Rockland (8) 4 August 1874. Surrendered, partial change of property. Vol. 84, page 110.
12. *Polly,* schooner, of Rockland. Official No. 19717—District of Waldoboro. Enrolled (46) at Rockland, 30 March 1878—permanent. Built at Amesbury in 1804-1805. 46.11 tons; length 61.4 ft., breadth 13.19 ft., depth 6.3 ft. Master: Ferdinand Devereux. Owners: Lewis Arey, sole Owner, South Thomaston. One deck, two masts, square stern, a billet-head. Previously enrolled (21) at Rockland 5 October 1874. Surrendered, property changed. Vol. 85, page 171.
13. *Polly,* schooner, of Rockland. Official No. 19717—District of Waldoboro. Enrolled (60) at Rockland 5 May 1883—permanent. Built at Amesbury in 1804-1805. Gross: 48.27 tons; Net: 45.86 tons; length 61.4 ft., breadth 13 ft., depth 6.3 ft. Master: Henry Clark. Owners: Lewis Arey, sole owner, South Thomaston. One deck, two masts, square stern, a billet-head. Previously enrolled (46) at Rockland 30 March 1878. Surrendered, change of size. Vol. 83A, page 235.

14. *Polly,* schooner, of Portland. Official No. 19717.—District of Waldoboro. Enrolled (41) at Rockland 25 June 1896—temporary. Built at Amesbury in 1804-1805. Gross: 48.27 tons; Net: 45.86 tons; length 61 ft., breadth 13 ft., depth 6 ft. Master: D. A. McFarland, Rockland. Owners: David McFarland, sole owner, Portland, Maine; D. A. McFarland managing owner, Rockland. One deck, two masts, square stern, a billet-head. Previously enrolled (60) at Rockland 5 May 1883. Surrendered, property, district and hail changed. Vol. 89, page 49.

15. *Polly,* schooner, of Portland. Official No. 19717—District of Portland and Falmouth. Enrolled (5) at Portland 13 July 1896—permanent. Built at Amesbury in 1805. Gross: 48.27 tons: Net: 45.86 tons; length 61.4 ft., breadth 13 ft., depth 6.3 ft. Master: D. A. McFarland. Owners: David McFarland, sole owner, South Portland. One deck, two masts, square stern, a billet-head. Previously enrolled (temporary) at Rockland 25 June 1896. Surrendered, arrived home port. This document surrendered at Rockland 7 February 1900, property and district changed. Vol. 13, page 161.

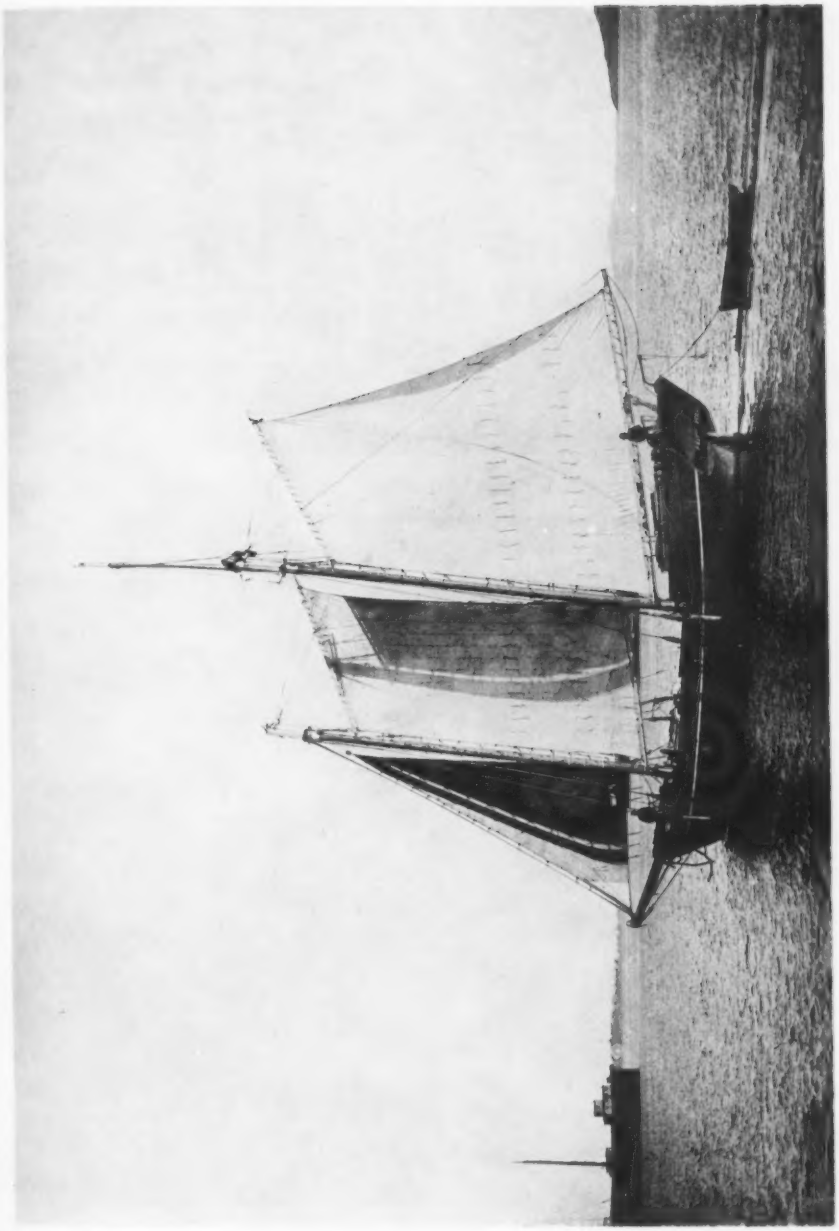
16. *Polly,* schooner, of Rockland. Official No. 19717—District of Waldoboro. Enrolled (43) at Rockland 9 February 1900—permanent. Built at Amesbury in 1805. Gross: 48.27 tons; Net: 45.86 tons; length 61.4 ft., breadth 13.3 ft., depth 6.3 ft. Master: Ira Webber. Owners: H. B. Webber and L. H. Webber, copartners, Rockland. One deck, two masts, square stern, a billet-head. Previously enrolled (5) at Portland 13 July 1896. Surrendered, property, district and hail changed. Vol. 89, page 218.

17. *Polly,* schooner, of Belfast. Official No. 19717—District of Belfast. Enrolled (13) at Belfast 13 February 1903—permanent. Built at Amesbury in 1805. Gross: 48.27 tons; Net: 45.86 tons; length 61.4 ft., breadth 13 ft., depth 6.3 ft. Master: George F. Ryan, Belfast. Owners: George F. Ryan 15/32, mariner, Belfast Fuel and Hay Co. 8/32, A. A. Howes 4/32, Robert Burgess 2/32, Swan & Sibley Co. 2/32, N. S. Lord 1/32, Belfast. One deck, two masts, square stern, a billet-head, built of wood. Previously enrolled Rockland (43) 9 February 1900. Surrendered, property, hail and district changed. Vol. 24, page 61.

18. *Polly,* schooner, of Deer Isle [?]. Enrolled at Deer Isle 21 August 1907. [Data incomplete. Document probably at Bar Harbor, not available.]

19. *Polly,* schooner, of Rockland. Official No. 19717—District of Waldoboro. Enrolled (30) at Rockland 10 June 1908—permanent. Built at Amesbury in 1805. Gross' 48 tons; Net: 45 tons; length 61.4 ft., breadth 13 ft., depth 6.3 ft. Master: ——. Owners: V. Spencer, managing and sole owner, Rockland. One deck, two masts, square stern, a billet-head, built of wood. Previously enrolled (7) issued at Deer Isle 21 August 1907. Surrendered, property, district and hail changed. Vol. 91.

20. *Polly,* schooner, of Fall River. Enrolled (52) at Fall River 11 June 1910—permanent. Built at Amesbury in 1805. 45 tons; length 61 4/10 ft., breadth 13 ft., depth 6 3/10 ft. Master: J. H. Weldon. Owners: J. H. Weldon, Dighton. One deck, two masts, square stern, a billet-head. Previously enrolled at Rockland 10 June 1908.



Schooner *Polly*, built at Amesbury, Massachusetts, in 1805

Reproduced from a photograph in the Peabody Museum of Salem, taken by N. L. Stebbins, probably about 1890

Schooner *Lillian E. Kerr* under three-masted rig at Machiasport, Maine, 1932
Reproduced from a photograph by Robert H. I. Goddard, Jr.

Schooner *Lillian E. Kerr* under four-masted rig at New Haven, Connecticut, after 1938
Reproduced from a photograph owned by Count Pehr Sparre

21. *Polly,* schooner, of Boston. Enrolled (22) at Fall River 24 June 1913—temporary. Built at Amesbury in 1805. 45 tons, length 61 4/10 ft., breadth 13 ft., depth 6 3/10 ft. Master: Alfred Johnson. Owners: Alfred Johnson, Boston. One deck, two masts, square stern, a billet-head. Previously enrolled at Fall River 11 June 1910.

Though no further customs documents were issued to the *Polly,* her name appears in the *List of Merchant Vessels of the United States,* until the 1918 edition.

Notes

The Schooner 'Lillian E. Kerr'

One of the last coasters to be built during the World War I construction period, the three-master *Lillian E. Kerr* had an interesting history. She was launched in 1920 at Pocomoke City, Maryland, by E. James Tull, her tonnage being 548 gross, 475 net and her measurements, 160.2 x 35.5 x 12.7 feet. (Plate 28.)

Being exceptionally strongly built and also rather large for a three-master, she was a difficult vessel to handle. Generally considered a slow sailer, she frequently made protracted voyages, as for example, her forty-one-day trip between Georgetown, South Carolina, and New York. Yet there was no doubt of her ability to carry sail, given a favorable wind. For proof of this fact, it suffices to cite a round trip between Easport, Maine, and South Amboy, New Jersey, which took only eight days, including loading time at South Amboy.

Doubtless her stiffness under sail may be attributed to the strength of her hull which was tried many times during her existence. In November 1935, while north-bound with lumber, the *Kerr* encountered a severe storm off Cape Henry. Rather than take the time to put into Hampton Roads, her captain felt that the vessel was capable of staying at sea and was riding it out successfully until the deck-load shifted, necessitating her being towed in. She was also reported to be short of provisions, probably an indication of another long passage, Again, on 13 September 1937, she was driven ashore by a heavy gale at East La Have, Nova Scotia, but was floated unharmed. The hurricane of 21 September 1938 found her working her way northward off Cape Hatteras. Despite the severity of the storm, she rode it out successfully with no damage to her hull and with only the loss of several sails. She then proceeded to La Have, Nova Scotia, her original destination and, after minor repairs to her rigging, was laid up for the winter.

Owned during the late 1920's and early 1930's by the C. A. and B. F. Small Corporation of New York, the *Kerr* engaged in general coastwise trade and was sent wherever cargoes were offered. Late in 1937, she was sold to Captain James L. Publicover of Dublin Shores, Nova Scotia, who planned to operate her in trade to the West Indies with his son, William, as captain. Having carefully selected a strong vessel from among the remaining coasters, the Publicovers set out to improve her sailing qualities. They studied her hull and rig for a while and then came to the conclusion that their ends could best be served by changing her from a three- to a four-master. Accordingly, on 17 April 1938, she arrived at Robar's Shipyard, Dayspring, Nova Scotia, to undergo this radical and costly experiment. While the change did not greatly improve her speed, it did succeed in making her easier to handle and was regarded by the owners as a worthwhile investment. Certainly, it did not reduce her ability to take punishment, as illustrated by her behavior in the 1938 hurricane, already described.

Plans for operating the *Kerr* in the West Indies trade were rudely interrupted on 17 January 1939 by the loss of Captain Publicover's other four-master, *Laura Annie Barnes*.[1] For some years, this vessel had been operated between Nova Scotian ports and New Haven, Connecticut, and the Captain felt it best to continue this run in the *Kerr* in order to preserve a steadier and more profitable busi-

[1] *Sea Breezes*, XXIV (May 1939), 57.

ness than was likely to result from charters to the Caribbean area. For four years, until her loss in 1942, she plied New England waters, carrying baled wood pulp and occasional lumber cargoes west and returning east light or with coal loaded at New York. Her best run in this trade was made early in January 1941, when she completed a round trip between Nova Scotia and New Haven in fourteen days, including the time required for discharging cargo. Marked by frequent and regular passages, her career in the wood pulp trade was uneventful except for two incidents which brought her some notice in the press.

The first occurred on 30 January 1940, when she was bound from Lunenburg, Nova Scotia, for New Haven with wood pulp. Having run out of wind, she had anchored in Nantucket Sound, one mile south of the Cross Rip lightship. While she lay becalmed, the temperature dropped sharply and she became partially frozen in. At the turn of the tide, the ice began to move, threatening to break out her anchor and set her ashore on near-by Tuckernuck Shoal. Fortunately, her plight was discovered by a Coast Guard cutter which towed her to safety at Vineyard Haven. By a curious coincidence, this incident occurred at the exact place where the *Barnes* had been lost, hardly more than a year before.

January seems to have been a dangerous month for the Publicovers, for one year later, in January 1941, the strength of her hull and the courage and seamanship of her crew were severely tested by a gale in the Gulf of Maine. After sailing from Lunenburg with wood pulp for New Haven, Captain Publicover endeavored to hold the *Kerr* to the coast as he worked westward. This was a common and understandable practice of coasting schooner captains in wintertime, for they were ever on the lookout for blusterous northwesters which would drive them off shore. The Captain's precautions were of no avail, however, for as the *Kerr* neared Cape Ann, the wind shifted into the northwest and rose to such violence that, despite the efforts of her crew, she was blown off to the southeast. As the weather got thicker, she continued to stand in for shore, but for several days her position was in doubt since the overcast sky prevented Captain Publicover from getting a sight. When at last he was favored by a break in the clouds, the Captain located his vessel ten miles off Georges Bank — a dangerous lee shore in the northwester still blowing with undiminished force. To make matters worse, the rigging was beginning to show signs of damage from ice and chafing. Finally, just as the danger of the vessel's position became fully manifest, she carried away her headstay. Since she was faced with the urgent necessity for clawing off the Banks in the teeth of the gale, she had to have this stay in order to carry headsails. Spurred by the menace of the treacherous shoals to leeward, the crew struggled for hours on the icy, slanting decks to rig a temporary replacement and heave it taut. Thus given a new chance for survival, the *Kerr* rose nobly to her task, fought her way clear of Georges and, aided by more favorable winds, filled away to run south of Nantucket for Block Island.

Her troubles were not over, however, for as she approached Block Island Sound, the wind turned westerly again, forcing her to run for shelter at Vineyard Haven. She made port at the Vineyard 21 January, an eventful nine days out of Lunenburg, food and fuel gone, but with her crew thankful both for her strength of hull and rigging and for Captain James Publicover's foresight in providing, aboard ship, the means for effecting major repairs at sea.

The declaration of war by the United States did not alter the *Kerr's* routine. Her cargoes were essential war materials, her delivery of them, regular and efficient. Several times, during the rainy

summer of 1942, she was sighted off the New England coast by those enthusiasts who had learned to recognize her graceful sheer and jaunty topmast staysails. But, driven as she was by the winds, she kept her own schedule and it was this unavoidable failure to mesh in with convoy or other ship movements that led to her tragic destruction later in the year. On 13 November 1942, while proceeding from New York for Halifax, with coal, the *Kerr* was run down by the steamer *Alcoa Pilot,* a unit of a convoy which was westbound in the Gulf of Maine. The accident can best be described by reference to the report of the master of the cable ship *Cyrus Field,* the 'Commodore' of the convoy.[2]

'My ship, *Cyrus Field,* being the Commodore, was the middle ship in the first three. The ship *Alcoa Pilot* was two cables on the port beam and the *Cryalite,* three and one half cables on the starboard beam.

'At about 12.04 midnight, saw a white light bearing about two points off our starboard bow and a little while after, saw a bright green light and later both red and green. At this time, I changed my course two points to starboard to give the *Alcoa Pilot* room to swing clear of those lights. At 12.15 A.M., the *Alcoa Pilot* crashed into the schooner which sank in two minutes; weather at the time being – wind calm, sea smooth, sky partly overcast, visibility very good. I could distinctly see that the schooner had three topsails and forward jibs set.

'After proceeding about three and one half miles, I was ordered to go back to pick up crew. I reduced speed one half mile from the scene and turned on searchlights and heard a man shout. We launched our boat and picked up the man; when in the boat he said: "There were seven of us in the crew," and again said, "I guess I'm the only one saved out of seven," and lapsed into unconsciousness.

'We had him on board in ten minutes where our ship's surgeon worked over him, but he died at 2:15 A.M., two hours after the crash. He had been in the water fifty-five minutes.

'We searched the vicinity diligently with two searchlights, saw an upturned dory and motor boat and numerous pieces of wreckage. After two hours of searching, we joined the convoy and proceeded to Cape Cod Canal where we landed the body.'

From a member of the *Alcoa Pilot's* crew, Captain Publicover has a statement giving the time of the collision as 12:19 A.M. and testifying to having seen the *Kerr's* lights as much as twenty minutes previous to that time. This source also states that the entire crew of the schooner were heard calling for help from the water. Only the grim, war-time necessity of getting the convoy away from the scene of the sinking before undertaking any rescue work prevented the probably successful saving of some, if not all, of the schooner's crew.

Perhaps accidents involving convoys are unavoidable under such conditions, but it is regrettable that one of the last and best-found of the remaining four-masters should have been the victim. It may be some consolation to the relatives of the *Kerr's* men to realize that vessel and crew were lost in the line of war-time duty and that the traditions of sail cannot perish when they are followed through fearlessly to the end.

ROBERT H. I. GODDARD, JR.

[2] Condensed from an account in the *Bridgewater Bulletin and South Shore Record,* Bridgewater, Nova Scotia, Wednesday, 6 January 1943, 1.

Book Reviews

CARL D. LANE, *American Paddle Steamboats* (New York: Coward McCann, 1943). 8½" x 11", cloth, xiv + 250 pages. Foreword by Alexander C. Brown, frontispiece in color by Arthur C. Adams, 139 illustrations, index. $6.00.

The genus 'steamboat fan' is by and large a difficult one to please and it may be anticipated that this book will provoke some disgruntled comments from members of the brethren merely because their own particular pet ('the *Emma B.*, finest little packet that ever steamed up the Shrewsbury,' etc.) has not been included. We shall not be concerned with this type of criticism for obviously Mr. Lane could not mention them all and actually he has been singularly successful in assembling one of the finest collections of steamboat portraits in as handsome a book as one could wish. This is sufficient raison d'être for the book, but unfortunately the effect is somewhat impaired by the accompanying text, together with some of the captions and the typical publisher's blurb ('nothing else has been published on the subject') which are not in keeping with the obvious value of the splendidly reproduced illustrations. These were drawn in large part from the enormous Eldredge Collection of The Mariners' Museum. Another source worthy of note consists of the charming contemporary reconstructions of the old vessels from the brush of Arthur C. Adams. His painting of the 1866 *Bristol* reproduced in colors for frontispiece and jacket should be specially cited.

However, as stated, the text might well have been improved by a broader understanding of the subject. Picturesque as it may sound, it is a fact that the Indians did not 'immediately,' or at all for that matter, name the steamboat 'Walk-in-the-Water.' The famous Lake vessel which carried this name was actually called after an Indian chief whose native name by translation was 'Mud Turtle.'

It would be impossible to list all the other historical peccadillos encountered. We must, however, take exception to the author's statement that steamboating did not exist between the Chesapeake and Florida, as would any self-respecing citizen of Elizabeth City, Edenton, or New Bern on the Carolina sounds and rivers. A more accurate statement would have been that no local historian has yet printed an accessible account of this traffic, which admittedly did not link such metropolises as New York and Boston. The lack of tailor-made secondary sources would also explain why the author's treatment of West Coast steamboating is extremely spotty.

We regret the omission in the portraits of the Fall River Liner *Pilgrim* of 1883, unlike the hypothetical *Emma B.*, a very important vessel in construction, performance, and the influence she exerted on later designs, but she is well enough known elsewhere. More important, therefore, was the omission in a series of engine plans purporting to cover types used on American steamboats of that one type with which the steamboat came into her own, namely the ante-bellum 'square' or cross-head engine.

Depending upon the individual reader's standard of values, the publication of this book will be considered justified or not. As an authoritative text it misses its mark, but certainly almost a gross of elegant pictures at not much more than a nickel apiece is a worthwhile bargain.

KENSIL BELL, *Always Ready! The Story of the United States Coast Guard* (New York: Dodd, Mead & Company, 1943). 5¾″ x ½″, cloth. xviii + 324 pages. Illustrated. $3.00.

For over a century and a half the United States Coast Guard has served the nation silently but well in times of peace and war. Why it has taken all these years to bring forth what amounts to the first attempt at recording the hisory of the service is difficult to understand. This war is not the first in which men of the Coast Guard have protected our own shores and have taken the Marines or Army off the Navy's hands to land them on hostile ground. And when the other services were in time of peace busily showing off their medals to the girls, the Coast Guard was taking care of pirates, slavers, smugglers and rum runners to say nothing of the perils to navigation, shipwrecks, and policing regattas.

From its beginnings in 1789 (under the Constitution it is the senior service) Mr. Bell has carried the story down to the landings on the North African beaches in November 1942. The book is by no means a detailed study of Coast Guard operations, logistics, or administration. Rather, by using episodes illustrative of each phase and period the reader is shown the what, why, and when of the service. While this form has not brought forth a work that can be compared with some of the other service histories, it is founded on a thorough study of the source materials and clearly written in a lively but restrained style it will serve admirably as an introduction to a more complete history.

Under present bookmaking conditions it is hardly fair to be hypercritical of the format books are given, and the OPA may not have allowed the publisher sufficient paper to permit an index. But for the extreme banality of the design and the use of a nauseous green ink for printing the illustrations the publisher should have included an apology to the reader.

MARQUIS JAMES, *Biography of a Business, 1792-1942* (Indianapolis, The Bobbs-Merrill Company, 1942). 6″ x 9″, cloth. 431 pages, 38 illustrations. $4.00.

To those interested in water-borne commerce the history of the insurance of vessels and cargoes should assume a place of importance. For centuries no extensive foreign trade has been conducted without the aid and protection of the marine underwriter. Indeed it is doubtful if any appreciable overseas business would ever have developed without his help in some form.

Aside from Lloyd's no organization other than the Insurance Company of North America has occupied a position of pre-eminence in the business for so long a time. It was one of the first corporations to be formed in the United States and the first to enter marine insurance, which until then had been conducted by individual underwriters often of dubious financial and moral strength. Born on the very same spot which had seen the creation of the United States as an independent government the growth of the company has closely paralleled that of the nation. The attacks

of the Barbary Pirates, the French depredations, the forays of Confederate cruisers, and those of German submarines and raiders brought bankruptcy to poorly managed concerns and trial and sorrow to the people at large. Between wars, wreckers, perils of the seas, and barratry brought difficulties aplenty for insurors. To weather one hundred and fifty years of these storms called for no small amount of acumen and adaptability to changed conditions. To consistently preserve comprehensive records of these problems and how they were solved is unusual in American business annals.

Yet housed in the company's archives are thousands of vessels' biographies told in the terse accurate words of the surveyor's birth certificates and the claim adjuster's obituaries. Details of an untold number of voyages are recorded. Reflected in the rise and fall of rates are the hopes and fears of the politician, the statesman, and the business man. These are not shadows dancing on the walls of the board room but, as management sought by foresight to earn a dividend for its stockholders and to give protection to its customers, projections on a world-wide screen.

It is to be regretted that Mr. James does little more than bend a knee before a group of local saints. However piously he makes his genuflections he has completely overlooked the significance of the records of the Insurance Company of North America. It is apparent that little knowledge of insurance and even less of ships and shipping were brought to the book. What induced the Pulitzer Prize biographer of Andrew Jackson to venture into something for which he is obviously unfitted is not known, but the book marks a missed opportunity to give the students of both economic and maritime history a work of prime importance.

W. J. V. Branch and Captain E. Brook-Williams, *A Short History of Navigation* (Annapolis, Md.: Weems System of Navigation, 1942). 5½″ x ″, cloth. x + 91 pages, 39 illustrations. $1.50.

Tracing the art of navigation in the Occident from its three separate roots, mathematics, astronomy and the making of scientific instruments, the authors have produced an interesting and informative little book. Each root is treated as an entity, the text aided by a profusion of diagrams and pictures of instruments, persons, and places which have played a part in the story. The chapters on the development of the navigator's instruments are certainly the best brief accounts available. The chapters on mathematics and astronomy are so condensed that a lack of continuity and clarity results.

Science from Shipboard (Washington, D.C.: Science Service, 1943). 4¼″ x 7″, paper. 268 pages, 138 illustrations. 25 cents.

This book is primarily intended to be a guide-book for those, who making their first extended sea trip, are endowed with sufficient curiosity to desire to learn something about the various phenomena encountered. Authorities describe in clear, simple terms the causes and effects of waves, winds, and weather; the movements of celestial bodies; the various forms of life in and over the seas; the mechanics and navigation of a vessel. No part of the book is exhaustive but there are few sea-going persons who would fail to find it both interesting and instructive.

PAINTINGS and PRINTS of AMERICAN SHIPS, PORT VIEWS, PORTRAITS of MERCHANTS, BUILDERS, and SAILORS, and all subjects relating to THE SEA

BOUGHT AND SOLD BY

CHARLES D. CHILDS

171 NEWBURY STREET, BOSTON, MASS.

I am interested in collecting and selling any pictorial material of good quality touching upon the Navy, Whaling, *the* Merchant Marine *and* Yachting, *especially paintings by* Thomas Birch, Fitzhugh Lane, Robert Salmon, James Buttersworth, James Pringle, Samuel Walters, D. Macfarlane, Tudgay, *the* Roux *family*, Pellegrini, Montardier.

CATALOGUES ISSUED CORRESPONDENCE INVITED

THE AMERICAN NEPTUNE

Volume I 1941 | Volume II 1942 | Volume III 1943

are available from
The American Neptune, Incorporated
Salem, Massachusetts

at $5.00 per volume Single numbers, $1.25 each